



FRIDAY, OCTOBER 8.

The Canada Pacific Railway.

It has been generally known for some weeks past that several members of the Dominion Government, including the Right Hon. Sir J. A. Macdonald, P. C., K. C. B., the Premier, Sir Alexander Galt, K. M. C. G., Sir C. Tupper, and the Hon. Mr. Pope are in this country, and have been engaged in negotiations looking to the transfer of the Canada Pacific Railway, now under construction, to a company or combination of capitalists. An undertaking of such magnitude necessarily requires careful consideration, and the negotiations have accordingly appeared all too slow for politicians in Canada and financial agents in this country. Numerous unauthorized reports have from time to time appeared in British and American journals as to the terms of settlement, and the following communiqué has been extensively published during the past week:

"The Canadian Government have concluded an arrangement with a banking firm in London, a financial association in Paris, and a financial house in New York for the construction and operation in perpetuity of the Canada Pacific Railroad from Ottawa to the Pacific Coast. The Government give a subsidy of several millions sterling, a number of millions of acres of land, and also all the line already built and the surveys of the entire road estimated to have cost (i. e., the line built and the surveys) between five and six millions sterling. The Canadian ministers, who have been for some weeks in London for the purpose of carrying through these negotiations, are satisfied that they have made an arrangement which will be generally acceptable to the people of Canada.

We understand that while the foregoing statement pretty correctly indicates the line which negotiations have taken, yet down to the time of writing nothing definite has been settled. It is to be hoped, in the interests alike of Canada and the Empire, that the difficulties now intervening may be removed, and a work of so much importance may be vigorously prosecuted to a completion. It is not generally known in this country that so much progress has been made with the enterprise, a few facts in regard to which will be of interest to our readers.

The history of the undertaking, so far under the direct control of the Canadian Government, is as follows: The first expenditure on construction was toward the end of 1874. Contracts were then entered into for the telegraph from Lake Superior to British Columbia along the route of

A second 100 mile section west of Red River has recently been let, making a total of 832 miles now under construction, consisting of main line, 731 miles; and Pembina and Winnipeg branches, 102 miles. In April last the rails were laid 136 miles west of Fort William, and 90 miles east of Selkirk; trains run from Emerson to Cross Lake, 161 miles.

The cost of the route will, it is said, bear favorable comparison with that of the other completed and projected transcontinental lines. The general summit to be obtained is lower and the gradients more moderate. While the Central Pacific, in climbing the Sierras, attains a height of over 7,000 ft., and the Union Pacific passes the Rocky Mountains at an elevation of over 8,000 ft., the Canada Pacific has but one summit on its route at Yellow Head Pass, where a level of 3,650 ft. is reached. The cost of the 406 miles from Fort William to Selkirk, will be about \$17,000,000; and for the Pembina Branch the outlay has been \$1,750,000.

For the whole route, from Lake Superior to the Pacific coast, Mr. Sandford Fleming, the government Engineer-in-Chief, has made the following estimate, including a fair allowance of rolling-stock and engineering during construction:

Fort William to Selkirk	406 miles.	\$17,000,000
Selkirk to Jasper Valley	1,000 "	13,000,000
Jasper to Lake Kamloops	335 "	15,500,000
Lake Kamloops to Yale	125 "	10,000,000
Yale to Port Moody	90 "	3,500,000
Add, say		1,000,000
Total	1,956 miles.	\$80,000,000



Fig. 1.

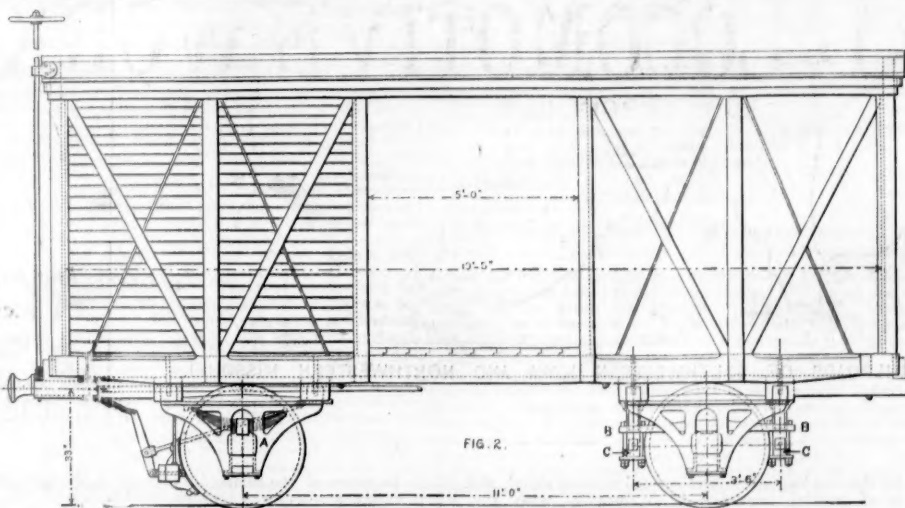


FIG. 2.

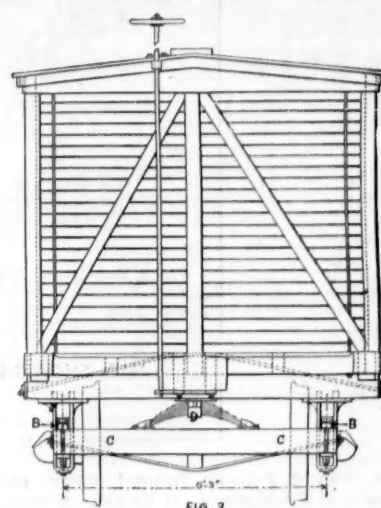


FIG. 3.

IMPROVED FOUR-WHEELED CAR, FOR THE FLINT & PERE MARQUETTE RAILROAD.

Designed by Mr. Sanford Keeler, General Superintendent.

the railway, including the clearing of the forest land to a width of 132 feet. The line was divided into four sections, on three of which the work was prosecuted with vigor, and the telegraph completed from Fort William to Edmonton, 1,200 miles, so that messages could be transmitted. The remaining section across the mountains to British Columbia remains incomplete. In the same year, 1874, the grading of the Pembina Branch for 63 miles north of the international boundary was commenced. In 1877 the grading was extended to Selkirk under the same contract, and in 1878 the track was laid on the whole length, 85 miles. In 1874 the extension of the Canada Central Railway to the eastern terminus, near Lake Nipissing, was subsidized. Early in 1875 two sections were placed under contract, the one from Fort William 33 miles to Sunshine Creek, and the other east from Selkirk 76 miles to Cross Lake. An extension east of Cross Lake 36 miles to Keewatin, at the outlet of Lake of the Woods, was placed under contract in January, 1877. In 1876 a contract was made for an extension from Sunshine Creek west to English River, 80 miles. In 1878 the Georgian Bay Branch was undertaken, but this work was subsequently abandoned. In the spring of 1879, the line between English River and Keewatin, 185 miles, was let in two contracts, and in the summer following a section of 100 miles west of Red River, including a branch from the main line to the city of Winnipeg, was placed under contract. At the British Columbia end of the line ground was broken toward the close of last year, when the grading, bridging, track laying and ballasting, from near Yale to Savona's Ferry, a distance of 127 miles, was placed under contract.

The length now under construction is thus as under:

Fort William to Selkirk (main line)	Miles.	410
Selkirk to Emerson (Pembina Branch)		85
West of Red River (main line and Winnipeg Branch)		100
In British Columbia (main line)		127
Total miles constructed		722

The above does not include cost of exploration and preliminary surveys over a wide extent of country between latitude 49 deg. and 56 deg. along the route, amounting to over \$3,000,000, nor the cost of the Pembina Branch, \$1,750,000, nor other amounts with which the Pacific Railway account of the government is already charged.

In the course of the surveys three alternative routes through the mountains into British Columbia have been laid down in addition to the line as finally fixed to Burrard Inlet. All of these are further to the north than the selected line, and average about 200 miles greater length. They follow respectively the Peace River Pass and the Pine River Pass, and it is recommended that one or the other be constructed when practicable, on account of the value of the territory thus to be opened up.—*London Railway News*.

Losses by the Pittsburgh Railroad Riots.

The official report of the losses by the railroad riots of July, 1877, is just published. The following is the loss of railroad property:

For Pennsylvania Railroad losses	\$2,007,400
Pittsburgh, Cincinnati & St. Louis Railway	227,814
Cleveland & Pittsburgh Railway	32,233
Erie & Pittsburgh Railway	5,940
Pittsburgh, Ft. Wayne & Chicago Railway	34,709
Ashtabula, Youngstown & Pittsburgh Railroad	2,010
Total	\$2,310,106
Accrued interest to date	334,974

Grand total

These claims were compromised at \$1,600,000. Of railroad rolling stock there were wholly destroyed or partially damaged 107 locomotives; there were wholly destroyed 33 passenger coaches, 5 Pullman palace coaches, 3 officers' coaches, 7 emigrant coaches, 3 combined baggage and passenger coaches, 1 paymaster's car, 8 baggage cars, 10 express

cars, 2 postal cars, 951 box or house cars, 92 refrigerator cars, 84 stock cars, 856 gondola or flat cars, 48 caboose or freight conductors' cars, 1 tool car, and 98 coal and coke cars. If these engines and cars had been coupled together in one train it would have covered eleven and three-quarter miles of track.

Other important losses were the Pittsburgh Grain Elevator Company, original amount of claim, \$211,210.80; compromised and settled for \$133,804.23.

Pullman Palace Car Company, original amount of claim, \$88,000; compromised and settled for \$55,217.

Baltimore & Ohio Railroad Company, original amount of claim, \$50,469.30; compromised and settled for \$33,232.82.

Keystone Hotel Company, original amount of claim, \$32,724.54; compromised and settled for \$22,293.41.

Seventy-nine buildings burned belonging to private individuals and corporations other than those belonging to the railroad.

The total number of all kinds of claims to date (Sept. 20, 1880) which have been settled by the County Commissioners, mostly without intervention of the courts, 1,502; the face of these claims was for loss, and did not include the interest, amounting to \$3,261,013.81. They have been compromised and settled for \$2,489,737.97.

Improved Four-Wheeled Car.

Nearly all American rolling stock is constructed on what has been called the "three-legged system," that is, the weight of the vehicle is made to rest on three points, so that it can adjust itself to the inequalities of the track. The reason for this is that three supports will always rest firmly on any surface, no matter how uneven, but four or more, if in the same plane, will touch an equal number of points only when the position of the latter corresponds with that of the former.

So far as we now know, four-wheeled cars have always been made so that their weight rests on four points, notwithstanding the fact that in the construction of all wagons and carriages for ordinary roads the three-legged principle had been used ever since we have any knowledge of their construction. One objection which is made to the use of four-wheeled cars, in this country, is their liability to get off the track, and, as practical trainmen say, a train of such cars is like a flock of sheep, when one leaves the track all the rest follow. The fact, however, that several hundred cars of this kind have within the last year been placed on the New York Central Railroad, has called attention anew to their construction, and has led Mr. Sanford

Keeler, the Superintendent of the Flint & Pere Marquette Railroad, to give his attention to the improvement of this form of vehicle, and to apply to it the principle named. The illustrations herewith represent a perspective view, fig. 1; a side elevation, fig. 2, and an end view, fig. 3. From fig. 2 it will be seen that the pedestals A, and the springs for the one axle are arranged in the ordinary way, so that the weight of the car body rests on top of the journal-box on each side. At the other end of the car, instead of placing springs over each journal-box, wrought-iron bars, B B, are substituted. To the ends of these bars transverse trussed wooden beams, C C, are bolted and extend from one bar to that in the opposite side. The springs, D, on which this end of the car rests, are then placed in the centre of these timbers, and the car-body can rock or roll on them as a central bearing. By this arrangement one end of the car rests on two points at each side, and at the other end on one. It is true that there are two springs like D, but this in no way interferes with the rolling movement of the car-body, nor with an equal adjustment of the weight on a road, however uneven. The perspective view shows the arrangement very clearly. The car is otherwise well-designed. The plan has been patented by Mr. Keeler, who will no doubt give any other information desired. His address is East Saginaw, Mich.

—Mr. Wm. F. Herman, for some years past with the Chicago, Burlington & Quincy, has left that road to accept a position as Secretary to Mr. George H. Daniels, General Ticket Agent of the Wabash, St. Louis & Pacific.

The Disputed Territory.

The map published herewith shows the situation of the completed railroads of the Chicago, Rock Island & Pacific, the Chicago, Burlington & Quincy and the Wabash, St. Louis & Pacific companies in Southwestern Iowa and North western Missouri, and is intended to illustrate the territory over which the Wabash purposes to build in order to complete a line from Keokuk to Council Bluffs. The Rock Island's lines are represented by dotted lines, the Burlington's by entire lines, and the Wabash's by crossed lines. Since this map was drawn we have news of the completion of another branch of the Rock Island most of the way from Avoca, to meet the Hastings & Carson City line of the Burlington. Its southernmost line is its road to Leavenworth. The Wabash has a branch (not shown) very close to that of the Burlington, from Clarinda south to its St. Louis-Omaha line. The Burlington owned no road south of this line at the time it was completed, but has since purchased the Kansas City, St. Joseph & Council Bluffs (which includes the part of the line from Creston to St. Joseph south of the Iowa line, as well as the St. Joseph-Council Bluffs line), and also the road from St. Joseph to Albany; and it has extended the Chariton-Grant City Branch, beyond Mt. Ayr, and built the whole of the branch of that branch shown as terminating at Bethany (the track is not laid quite so far yet), and which is to be extended to Albany, it is said. The Wabash's line, shown with its western terminus at Humeston, and extending thence eastward through Centerville and Glenwood is the Mis-

roads, each more than a hundred miles long, there is already no land more than ten miles from a railroad.

The Nicaragua Canal.

Mr. John Bogart, Secretary of the American Society of Civil Engineers, read a paper before the society Oct. 6, which had been prepared by Mr. A. G. Menocal, of Washington, on "Inter-oceanic Canals: Additional Information Obtained by Recent Surveys in Nicaragua." The object of the paper was to show that a route surveyed recently by Mr. Menocal, and known as the Lajas route, is better than the one previously approved, known as the Del Medio route. Mr. Menocal's conclusions are as follows:

When the canal line extending from below the River San Carlos to Greytown was located by the surveying expedition of 1873 but little information concerning the topography of the country beyond the valley in close proximity to the river could be obtained. The rainy season was near at hand and the personnel of the expedition was too limited to admit of detaching any one from the main work of location for the purpose of exploring an entirely new region, in which the chances of finding a more favorable location than was known to exist along the left bank of the river was very remote. More than one attempt was made in that direction, but without definite results. The line was in consequence carefully surveyed as delineated in plans accompanying the official reports. Some time after the completion of that work I had occasion to make a complete survey of the River San Juanillo and the lower valley of the San Juan, a region scarcely known even by the natives of the country. The information then obtained, sustained by subsequent explorations, indicated the possibility of finding a far more advantageous location for the canal route, so that diverging the line from the vicinity of the River San Juan at a point seven miles below the mouth of the San Carlos it would reach the harbor of Greytown by an almost straight line. It was expected

The Baldwin Locomotive Works, in Philadelphia, are to build 25 Forney engines for the Manhattan Elevated road in New York.

The Middletown (Pa.) Car Works have just finished repairing 500 gondolas for the Pennsylvania Railroad, and have begun to build 300 narrow-gauge freight cars.

The East Tennessee, Virginia & Georgia shops, at Knoxville, Tenn., have orders to build 200 freight cars for the road.

The Altoona shops of the Pennsylvania Railroad have built this year, including work now in hand, 23 passenger and 65 freight locomotives, 99 passenger cars and 2,000 freight cars.

The Wythe speed recorder has been placed on some of the freight trains on the Pennsylvania Railroad, on the Philadelphia Division, where they are to have a full trial.

The Michigan Car Co., in Detroit, has its works fully employed, with orders for over 500 cars ahead.

The Billmeyer & Small Co., at York, Pa., last week shipped four handsome passenger coaches, built in sections, to South America. They have also another order for the same kind for Central America, and are about making a shipment to the city of Mexico.

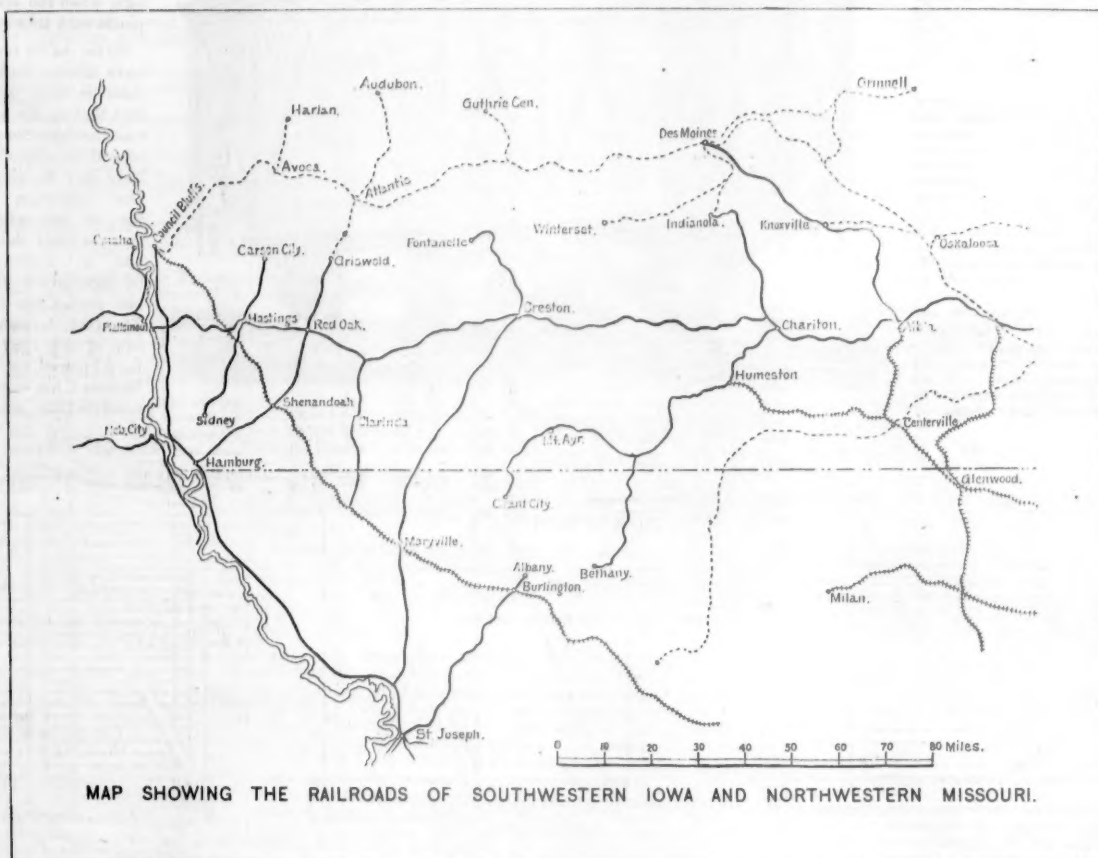
The Schenectady (N. Y.) Locomotive Works have just completed two locomotives for the Utica & Black River road.

The Dickson Manufacturing Co., at Scranton, Pa., has recently delivered several mogul freight engines to the Delaware & Hudson Canal Co.

The Fitchburg Railroad shops have just turned out a new passenger engine for the road. The company has just given out orders for two consolidation and two mogul freight engines and two heavy shifting engines.

Iron and Manufacturing Notes.

Messrs. Spielmann & Brush, whose office is at No. 18 Newark street, Hoboken, N. J., have the necessary facilities and are prepared to test cements of all kinds. Certificates will



MAP SHOWING THE RAILROADS OF SOUTHWESTERN IOWA AND NORTHWESTERN MISSOURI.

souri, Iowa & Nebraska Railroad, whose eastern terminus is on the Mississippi at Keokuk. It was originally located nearly due west from Centerville through the county seats of the southern tier of counties of Iowa to the Mississippi, opposite Nebraska City, where it was to connect with the Nebraska Railway, now a part of the Burlington's Nebraska system. It has been turned a little north of this original location to reach Humeston, and a few miles of track are laid beyond Humeston, also in a direction north of west, which has led some to suppose that it would reach Council Bluffs by a line between the Burlington and the Rock Island, where there are fewer cross roads; but the latest report is that it is to be extended to the Wabash's Council Bluffs line at Shenandoah, which would make an Omaha line as short as any other it could build and with the least addition of new road. The Burlington has also begun the construction of a branch from Humeston westward, which must be within a very few miles of the Missouri, Iowa & Nebraska extension for its whole length between Humeston and Shenandoah.

The recent extensions of the Burlington's branches to Grant City and toward Bethany tend to lessen the territory north of the St. Louis-Omaha road from which that line can draw traffic, and the one to Bethany (to be extended to Albany) will also be somewhat in the way of another road which the Wabash is constructing, namely, the Quincy, Missouri & Pacific, whose western terminus is shown at Milan on the map, which is to be extended westward to a junction with the St. Louis-Omaha line. Very little has been said about any interference here, however.

The distance from Mt. Ayr to the main line of the Burlington road is just about 20 miles, and in all the district through which it is now proposed to build two parallel rail-

by the new location to save several miles of canal, and, what is of greater importance, to dispense with the sharp curves made necessary by the abrupt bends of the river and high spurs projecting from the main hills in the interior to the water's edge, and relieve the canal from the drainage of many square miles of water-shed that had to be provided for by the original plan. The canal line can be taken from the left bank of the river San Juan at a point six miles below the San Carlos dam and located over very favorable ground in an almost straight line to Greytown. The total length of the proposed route from the Atlantic to the Pacific is: From the lake to the Pacific, 17.27 miles; lake navigation, 56.50 miles; river navigation, 63.90 miles; canal from River San Juan to Greytown, 35.90 miles, making a total of 173.57 miles, of which but 53.15 miles would be actual canal. The estimated saving by the proposed route would be \$11,388,879, which, deducted from the original estimate of cost by the River Del Medio route (\$52,577,718), would leave the estimate by the proposed route \$41,193,839.

THE SCRAP HEAP.

Railroad Equipment Notes.

The Taunton Locomotive Works, at Taunton, Mass., lately completed two passenger engines for the Little Rock & Ft. Smith road.

The Detroit Car Spring Co. has added to its works a new brick building 50 by 225 ft., which is supplied with the best machinery for the manufacture of elliptic springs for cars and locomotives. Skilled workmen have been secured, and the addition to the works will be started Nov. 1.

The Mason Machine Works, at Taunton, Mass., are building some narrow-gauge double-bogie locomotives for the Toledo, Delphos & Burlington road.

The Ohio Falls Car Co., at Jeffersonville, Ind., has lately delivered to the Louisville, New Albany & Chicago road a lot of box cars 33 ft long and built to carry 30,000 lbs.

The Manchester Locomotive Works, at Manchester, N. H., have recently delivered some freight engines to the Kansas City, Ft. Scott & Gulf road.

The Rhode Island Locomotive Works, at Providence, recently delivered to the Cheshire Railroad a mogul freight engine with 19 by 26 in. cylinders.

be given of the hydraulic properties, strength, weight, fineness and activity of samples furnished.

The Pennsylvania Steel Co., at Steelton, Pa., is adding to its works three new Bessemer converters and a large Siemens plant.

The Sand Blast File Sharpening Co., of Wilmington, Del., has secured the right to the sand-blast process for sharpening files for all the United States south and west of New York and east of the Rock Mountains.

The Bay State Iron Co. has just completed an addition to its works at South Boston, containing a mill for rolling sheet iron.

The old rolling mill at Lockport, N. Y., which has been idle since 1870, is to be rebuilt and started up.

Mr. H. G. Newton, successor to Lyon's Asbestos Paint Co., has lately shipped 251 gallons of Lyon's asbestos paint to the Tehuantepec Inter-Oceanic Railroad Co.

The B furnace of the Edgar Thomson Steel Co. recently made 1,225 gross tons of pig iron in seven days.

At the rail mill of the Bethlehem Iron Co., in Bethlehem, Pa., recently, 739 steel rails were rolled in 11 hours 40 minutes—700 minutes.

The Vulcan Steel Works, in St. Louis, are running to their full capacity. In one day recently 265 tons of finished rails were turned out in 24 hours.

Park Brothers & Co. are fabricating a 17-ton steam hammer, which will be the largest in the United States. The anvil block for this hammer will weigh 160 tons, and will be cast at the works of Messrs. Park. The firm's 5-ton hammer, with a 51-ton anvil block, is now in operation.—Pittsburgh Manufacturer.

The Buckeye Bridge & Boiler Works, in Cleveland, O., have lately finished several large oil stills, and are building the boilers for the St. Joseph (Mo.) Water Works.

Bridge Notes.

The Buckeye Bridge & Boiler Works, in Cleveland, O., have several contracts for highway bridges.

The Smith Bridge Co., of Toledo, O., has contracted to build a Howe truss bridge over the Wabash at LaFayette, Ind., for the Lake Erie & Western road. It will replace an old bridge and will have to be erected without stopping the movement of trains.

Messrs. Wilkins, Post & Co., of the Atlanta (Ga.) Bridge

Works, have made a contract with the Memphis & Charleston Railroad to renew the wooden members in the bridge over the Tennessee River at Decatur, Ala., which is used both by that road and the Louisville & Nashville. The bridge is 1,700 ft. long. The same firm has taken a contract to build a span of Pratt combination bridge over the canal at Augusta, Ga., for the Augusta & Knoxville road.

Prices of Rails.

Steel rails are still quoted at \$60 per ton at mill for later orders, and \$65 for immediate delivery. The market is unsettled, and English rails have been offered at a decline of \$2 per ton. The *Iron Age* estimates that orders are now on hand in the steel rail mills sufficient to keep them all busy until July next.

Iron rails are unsettled, with an unsatisfactory market, buyers being unwilling to pay prices at which the mills can realize a profit. Quotations are \$46 to \$47 per ton for heavy sections, up to \$50 for light rails.

Old iron rails are quoted at \$26 to \$27 per ton, with the market weak. A decline in prices is thought to be probable.

Snakes.

A station agent on the Jersey City & Albany road was recently run out of his office by a black-snake 9 ft 5 in. or 5 ft. 9 in. long, he is not quite sure which. He says this is only one of many large snakes he has seen around the station lately. Rockland County apple-jack is rather demoralizing, especially in a presidential year.

A news item in a Philadelphia paper speaks of a man being "killed by a train making a flying switch while walking on the Erie Railroad near the depot in Paterson, N. J." and a correspondent asks us: "Can a train make a flying switch while walking on the railroad?" We think it would be about as difficult for a train to make a flying switch while walking on a railroad as it would for a train to walk on a railroad while making a flying switch.—*Norristown Herald.*

The man who ordered the first locomotive in America is still living, and when he goes on a journey his trunk receives just the same usage as anybody else's.—*Detroit Free Press.*

Fast Time.

The fastest time over the Pennsylvania Railroad from Pittsburgh to Altoona which has ever been recorded was accomplished on Saturday last by James Dougherty, of engine No. 373. He made the run of 117 miles in two hours and 42 minutes with his engine attached to second mail express. This is an average of nearly 50 miles an hour, which is very fast time over the mountains.—*North American, Sept. 30.*

The Nashville *American* of Sept. 23 says: "John Keough, engineer on yesterday morning's passenger train from Louisville, made the time from Bowling Green to Nashville, a distance of 85 miles, in one hour and 40 minutes, including four stops. The distance from South Tunnel to Gallatin, six miles, was made in five minutes, which is 50 seconds per mile."

Blessing a Railroad.

In the midst of the forest, with hardly any evidence of civilization in sight, save the road itself, its train of cars, and the people who had come to honor the occasion, was performed the ceremony of blessing the St. Lawrence, Lower Laurentides & Saguenay Railway, which is intended to connect Three Rivers with Lake St. John. About 1,200 people, principally from Three Rivers and the surrounding parishes, were present. The scene of the ceremony was at the present terminus of the road in the parish of St. Tite, beyond the settlement. On a wooden platform hastily erected, and surrounded by his clergy, stood the venerable Bishop, addressing words of lofty eloquence to his hearers, previous to blessing the undertaking; in front of the platform was massed the large assemblage, composed principally of the hardy sons of toil, bareheaded, listening attentively to the words of their prelate; behind lay the iron road with its train of cars, the unconscious agents in all this display, and up and down, as far as the eye could reach, stretched the forest, whose foliage, marked with the changing hues of Autumn was indescribably beautiful—the whole scene taking one back to the days of early Canadian history.

His Lordship, the Bishop of Three Rivers, began his address with a brief account of the fall of man and the consequences which resulted from it. Man was condemned to make war against nature, to subdue nature to his wants, to wrest from the earth its fruits, and to bring the animal creation under subjection. Man's life was a continued contest; and when man refused to submit himself to this law of God he degenerated into the savage, and finally became extinct. Thus, in the case of savage tribes refusing to till the earth, they were reduced to warfare against the animals, and in the end disappeared. What had become, he asked, of the savage tribes that formerly occupied this continent? They had refused to bow to the law of God; they had refused to cultivate the soil, and consequently had become extinct. Man was also commanded to occupy the whole earth, and to enable him to fulfill this command he was given the genius of invention, by which he could contrive means to bring the very elements into his service. He then referred more particularly to the undertaking under notice, predicted a great future to be developed out of this enterprise, as the large tree sprang from a mustard seed, and, in conclusion, gave the new line the Angel Raphael as its guardian, that, as the angel watched over Tobias on his journey, it might equally watch over this road and its passengers. His Lordship then gave the benediction.—*Montreal Gazette, Oct. 2.*

An Active Tramp.

The passengers who arrived here at 7:40 on Saturday evening from Philadelphia, witnessed an acrobatic feat, the memory of which will remain long after the chief actor has passed in his checks. When the train arrived at Port Clinton the wheels were, as usual, inspected. While the inspector was tapping the wheels of the forward car he observed the figure of a man extended on the front truck. Finding himself the centre of attraction the figure slowly made his way from his uncomfortable position and at last stood upright and in the glare of a lantern. He was a man of medium stature, apparently well dressed, but lacking a hat. His hair stood on ends, not from fright, but from the force of the wind, caused by his rapid journey in the open air. His face and head, in fact his entire person, was coated with dust, coal dust, the dirtiest of all known dusts. How he succeeded in making the trip without injury was a mystery which he refused to explain, but he must have held on with considerable determination or he could never have stood the shaking he must have received. On being informed that he couldn't travel on the train any longer without a ticket, he rushed into the depot and purchased one for Pottsville. Shortly after the train had started on its way from Port Clinton, the conductor, Mr. Figanier, found the tramp standing on the hind platform of the car. He asked for a ticket, upon which the unknown stepped down upon the lower step, and, catching the side guard, swung himself from one side to the other and threatened to jump off if the conductor approached him. Mr. Figanier, afraid that the man would lose his hold, made

LOCOMOTIVE RETURNS, MAY, 1880.

Master Mechanics of all American railroads are invited to send us their monthly returns for this table.

NAME OF ROAD.	Number of locomotives in service.	Number of miles operated.	MILEAGE.		Miles run to ton of coal.	Average cost per engine.	Average cost per freight car per mile, cents.	COST PER MILE IN CENTS FOR						AVERAGE COST OF		
			Total.	Average per engine.				Repairs.	Fuel.	Stokers.	Miscellaneous.	Engineers, firemen and helpers.	Total.	Coal, per ton.	Wood, per cord.	
Allegheny Valley, River Division*....	139	36	77,081	2,141	43.70	23.25	20.80	0.747	7.50	3.02	0.45	6.45	17.45			
Low Grade Div.	120	19	35,878	1,888	30.90	18.05	20.40	0.834	3.33	3.38	0.08	6.48	13.77			
Central Pacific, Western Div.†	20	28	70,563	2,734	52.42	21.02			2.27	14.21	0.43	0.36	7.47	34.74	7.50	4.25
Northern & San Pablo Div.	104	31	67,453	2,176	45.21	21.77			7.70	10.47	0.42	0.30	7.01	32.62	7.50	4.25
Visalia Div.	157	16	61,592	2,867	38.33	18.94			8.52	21.16	0.40	0.11	6.87	37.41	7.50	4.25
Tulare Div.	170	12	32,910	2,743	32.74	15.99			6.70	22.80	0.54	0.24	7.74	38.65	7.50	4.25
Los Angeles, San Diego, Yuma & Wilmington Divs.†	661	3	118,758	3,390	50.68	17.18			2.98	14.74	0.50	0.23	6.83	25.78	7.50	4.25
California Pacific Div.	179	9	36,115	2,002	40.00	20.73			2.03	10.80	0.41	0.35	5.85	24.82	7.50	4.25
Stockton & Copperopolis.	49	3	5,275	1,758	43.90	20.13			2.63	16.80			6.38	28.04		
Sacramento Div.†	119	39	93,480	2,474		28.00	21.84		3.10	15.13	0.41	0.40	8.08	27.72		4.25
Oregon Div.†	151	10	24,08	2,401		49.50	24.94		0.83	8.58	0.37	0.14	7.94	22.86		4.25
Trobrek Div.†	305	23	61,592	2,867	38.33	34.35	21.18		8.33	16.43	0.41	0.38	8.10	33.7	7.50	4.25
Humboldt Div.†	200	15	45,943	2,418	39.32	18.94			7.94	18.88	0.44	0.43	8.19	34.43		4.25
Salt Lake Div.†	219	27	78,255	2,800	32.10	18.37			4.62	23.22	0.48	0.23	7.19	35.74	7.50	4.25
Chicago & Eastern Illinois.	225	47	120,310	2,560	41.90	19.30			4.48	5.80	0.24		5.80	16.32		
Chn. Ind. St. Louis & Chicago.	179	10	31,963	3,190	37.90	19.05			4.02	6.15	0.27		6.01	13.91		
Cleve. Col. Ctn. & Ind.	472	10	403,933	43,92		20.55			2.24	4.48	0.51		6.07	14.91		
Cleveland & Pittsburgh*.	275	84	185,490	2,208	44.12	20.20	17.10	0.881	4.22	3.39	0.40	2.85	6.43	17.2	1.40	2.70
Cleveland, Tus. Valley & Wheeling.	158	18	54,611	3,034	40.87	16.16			3.85	2.42	0.47		5.65	12.51	0.81	2.00
Delia, Lacka. & Western, Bloomsburg Div.‡	80	23	61,681	2,682		24.32			2.67		0.55		4.68	7.90		
Erie & Pittsburgh*.	98	28	61,614	2,211	45.69	18.25	17.70	0.808	5.04	4.16	0.44	1.51	6.67	17.85	1.90	1.90
Grand Rapids & Indiana.	328	28	110,063	3,146	43.18	19.31			1.47	7.45	0.40	1.94	5.67	16.91	3.4	2.50
Green Bay & Milwaukee.	304	15	39,305	2,614	54.68	34.28	21.40		2.56	6.61	0.33	0.62	4.63	14.15	4.10	2.00
Houston & Texas Central.	512	63	228,411	2,494	36.95	16.65	20.01		4.93	4.04	0.28		5.00	14.94	1.40	3.75
Illinois Central, Chicago Div.‡	385	95	228,411	2,494	36.95	16.65	20.01		4.93	4.04	0.28		5.00	14.94	1.40	3.75
Middle Div.‡	80	11	16,340	1,438	47.78	23.48	16.85		0.48	2.05	0.19		4.70	8.32	1.40	3.75
North Div.‡	345	56	117,527	2,038	38.81	17.38	18.85		4.17	4.04	0.27		5.50	14.91	1.40	3.75
Springfield Div.‡	113	10	27,020	2,703	41.83	13.28	13.88		4.19	7.55	0.36		5.94	17.97	1.20	2.90
Iowa Div.‡	401	45	110,705	2,466	33.87	19.30	13.11		3.73	6.18	0.26		5.78	15.90	2.50	5.50
Jeffersonville, Madison & Ind.*	229	42	93,041	2,214	52.61	14.27	10.92	0.760	3.75	4.79	0.39	2.05	5.13	16.11	2.31	2.00
Kan. City, St. Jo. & Council Bluffs*.	247	37	105,269	2,846	52.30	21.90	18.10		4.70	5.67	0.33		6.50	17.10	3.70	2.70
Lake Shore & Michigan Southern.	84	107,683	1,906	36.55	60.30	23.00			4.28	6.77	0.33		6.40	17.79	2.60	5.60
Buffalo Div.	117	237,397	2,026	37.3		29.79			5.24	6.39	0.30		5.80	17.71	2.20	5.43
Erie Div.	80	176,602	1,916	27.91	68.10	16.28			4.57	9.96	0.36		6.06	21.36	2.67	4.68
Mich. Southern Div.†	297	443,749	2,703	41.83		29.79			5.24	6.39	0.30		5.80	17.71	2.20	5.43
Little Rock, Miss. River & Texas.	113	10	27,020	2,703	41.83	13.28	13.88		4.19	7.55	0.36		5.94	17.97	1.20	2.90
Louisville & Nashville, First Div.†	470	62	122,318	1,975	31.80	13.94	16.30	1.240	2.91	6.41	0.28	1.33	6.03	17.80	1.96	2.22
Second Div.†	309	73	70,465	2,012	31.80	23.30	14.04	1.240	4.94	5.92	0.22	1.72	6.75	18.85	1.82	2.56
Memphis Div.†	131	16	41,069	2,571	11.92	15.31	10.62	1.841	3.62	5.32	0.33	1.48	5.36	12.36	2.40	2.00
Nash. & Decatur Div.	132	19	51,194	2,695	31.13	16.41	16.84	1.130	11.53	6.26	0.21	1.23	6.15	25.32	1.30	2.90
South & North Alabama.	189	36	94,819	2,631	35.34	21.29	14.41	1.130	5.47	4.92	0.28	0.57	5.50	16.80	1.71	2.00
Evansville, Ind. & Nash. Div.†	135	26	65,290	2,446	35.27	19.62	13.84	1.360	4.44	3.04	0.22	1.40	5.96	15.7	1.24	1.75
Mobile & Montgomery†	180	18	51,332	2,846	37.49	17.00	12.04	1.310	4.53	4.20	0.27	0.76	6.17	16.42	2.35	1.90
St. Louis Div.†	207	23	61,227	2,608	41.1	14.73	14.24	1.021	3.51	2.94	0.21	1.64	4.78	13.31	1.25	1.40
Marquette, Houghton & Ontonagon.	88	30	42,212	2,041	37.84	20.41	40.40		1.15	12.32	0.51		6.50	20.02	4.50	
Missouri, Kansas & Texas.†	795	88	270,193	3,099	42.71	17.97	17.10	1.020	4.10	4.43	0.42	0.63	6.28	15.92		
N. & W. Penn. & Ohio, 1st and 2d Divs.	228	84	137,615	2,511	33.90	16.67	19.10		2.83	5.81	0.46	0.74	5.81	15.61	2.98	2.68
Third and Fourth Divs.	197	5	137,645	2,617	43.36	25.70	17.85		3.08	6.72	0.32	0.60	5.30	19.86	2.30	2.08
Mahoning Div.	88	49	128,347	2,704	55.05	21.49	19.70		3.06	4.08	0.36	0.45	5.41	13.96	2.13	2.68
Northern Central, Elmira & Can. Div.	147	46	96,952	2,108	39.98	20.83			3.81	6.19	0.43		6.30	16.73	1.80	2.48
Pennsylvania, New York Div.‡	122	106	339,723	3,320	35.74	17.28			3.89	10.10	0.49		6.30	16.73	1.80	2.48
Amboy Div.‡	186	47	98,480	2,148	52.88	17.24			4.70	6.80	0.50		12.00	3.0	3.45	
Belvidere Div.‡	104	34	54,291	1,425	41.33	13.74			3.00	6.63	0.69		12.84	3.60	3.45	
Philadelphia Div.‡	172	140	415,835	2,977	30.71	13.85			4.50	5.63	0.60		10.70	1.40	2.98	
Middle Div.‡	132	101	117,527	2,038	38.81	17.38	18.85		4.00	5.19	0.50		11.00	1.40	2.96	
Pittsburgh Div.‡	220	175	467,541	2,677	26.72	12.72			5.20	5.40	0.60		11.20	1.40	2.96	
Tyrone Div.‡	119	31	50,208	1,911	32.02	18.12			7.39	4.40	0.60		14.38	1.4	2.98	
West Penn. Div.‡	104	21	3,815	1,359	42.9	43.10			3.70	5.40	0.30		7.30	1.40	2.97	
Lewistown Div.‡	63	10	15,59	1,308	24.15	16.34			2.89	5.15	0.50		8.41	1.40	2.98	
Bedford Div.‡	57	6	15,065	2,514	27.15	14.73	14.24	1.021	3.51	2.94	0.21	1.64	4.78	13.31	1.25	1.40
Frederick Div.‡	109	10	29,863	2,034	48.28	20.24			9.30	6.10	0.50		16.00	2.30	2.85	
Pittsburgh, Va. & Charleston Div.‡	30	13	15,969	1,331	47.27	16.60			2.40	3.10	0					
Pitts. Ft. Wayne & Chi. East. Div.*	371	151	495,816	2,688	41.60	21.66	17.30	1.018	3.82	3.63	0.38	2.05	6.45	16.34	1.63	1.63
Western Div.*	289	116	398,655	2,601	43.30	22.40	25.69	0.888	6.09	3.97	0.32	2.15	6.69	19.45	1.72	1.72
Pitts. Chn. & St. Louis, Little Miami	197	47	101,158	2,528	44.9	13.39	16.80	0.835	4.57	4.83	0.42	3.10	6.01	19.25	2.16	1.50
P., C. & St. L. Div.	242	102	241,700	2,570	30.46	19.43	21.60	0.769	4.79	3.18	0.36	3.81	6.02	17.16	0.60	2.50
Savannah, Florida & Western.	343					19.52			3.65	3.50	0.31		6.30	13.76	1.30	2.50
Toledo, Peoria & Warsaw	297	46	120,410	2.74	39.90											
Wabash, L. & P., Ohio & Ind. Div.†	350															
Illinois Division†	123	20	41,738	2,095	48.12	19.16			2.20	8.39	0.50		11.00	4.00	3.00	
West Jersey Div.																



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EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

THE TRAFFIC OF A PANAMA CANAL.

It has always seemed to us that the discussions concerning the proposed interoceanic canal across Central America omitted the primary fact of all in any transportation or other industrial enterprise. Years of labor and considerable sums of money have been spent to ascertain if a canal is practicable and on which route an effective one can be built for the least cost, and a very warm contest has been had over the different routes. In all this those interested seem to have forgotten altogether to ask what the canal was to be made for—at least no inquiry serious enough to deserve the name of investigation was made, even by parties who were ready to ask the world to expend \$100,000,000 to \$300,000,000 to execute the project. It seems to have been taken for granted that an immense traffic would utilize the canal if it could once be constructed, and, as in many other cases, routes of vast length seem to have been considered the same thing as routes with vast traffic. This feeling was manifest at the time of the construction of the Pacific railroads, and is still, among the mass of those who know little of the traffic of those roads, and are not aware that the production of a few western counties exceeds in bulk the entire tonnage from across the Pacific that passes over the Pacific railroads.

Even before making a serious survey for an isthmus canal we should ascertain what need there is for such a work—what commerce would profit by it, how great this commerce is, and how much it would profit by an isthmus canal. Instead of this we have had such statements as this: It is 13,600 miles from New York to San Francisco by rail, and only 5,300 by way of Panama. This is only one of many elements requisite

to ascertain how much the canal would be worth, others being, the whole amount of the New York-San Francisco traffic; the advantages of the two routes as sailing routes, independent of length; the rates at present obtained by both routes; the prospect of a growth of the traffic, etc. That is, we need what we have sometimes called a "traffic survey" before we can know whether it is worth the while to make a survey for a route or to design a canal, not to say begin its construction. The work of the economist and the statistician needs to precede that of the engineer, if there is to be any certainty that the latter will serve a useful purpose.

At last such a traffic survey has been made, and that with rare intelligence and thoroughness. It has not, however, been the work of any party of canal projectors, but of what we may presume to be an entirely disinterested party, namely, Mr. Joseph Nimmo, Jr., the Chief of the United States Bureau of Statistics, who says, in submitting it to the Secretary of the Treasury, that he undertook it "at the request of the American Society of Civil Engineers, and of several gentlemen who have given the subject much study, and whose views command public attention."

Some mention of this report has been made in most of the daily papers, but it has not received the attention which it deserves; for it is one of the most creditable statistical investigations that we have ever seen, and, unless it can be shown erroneous in the facts which it adduces, is likely to put an end to any serious effort to cut a canal across the isthmus, either at Panama or Nicaragua.

The report first takes a census, as it were, of the traffic which might use a canal across the American isthmus, which in the first place is assumed to be all that which would have a shorter route than that now followed. This necessitates a comparison of the lengths of different routes between the same places, such as this of the routes between New York and Hong Kong:

Via Suez Canal	11,796 miles.
" Cape of Good Hope	14,701 "
" Cape Horn	17,680 "
" Isthmus of Panama	11,238 "
" rail to San Francisco	9,022 "

The table of routes is supplied by the United States Coast Survey, which is certainly good authority, and is of prime importance in the study of this question, and affords figures which are not commonly accessible to landmen. Many of us will be surprised, probably, to learn that the distance from New York to Hong Kong is about as short by the Suez Canal as by way of Panama; that from Liverpool to Calcutta is 9,300 miles further by Panama than by Suez, and 5,500 further than by the Cape of Good Hope, and at some of the other distances given here.

Selecting the commerce which would have found its shortest route by way of Panama—all that commerce, including all that actually passed the isthmus and all that went around Cape Horn, by the Cape of Good Hope, or by the Suez Canal, between Pacific ports and Atlantic ports either in Europe or America—Mr. Nimmo finds it to be 2,818 vessels, having an aggregate capacity of 2,938,386 tons, the reports being for the latest year accessible, and generally about 1878. Just about one half of this tonnage is of vessels which cleared from European countries in trade around Cape Horn with other countries than the United States, 551,929 tons were of vessels from United States Pacific ports to European ports, 533,000 were of traffic which actually crossed the isthmus, and only 368,329 tons were of vessels between Atlantic and Pacific ports of the United States, which is the voyage that would be shortened most by an isthmus canal.

But it is by no means probable that all the commerce that would have had a shorter route by an isthmus canal would have taken this route had there been a ship canal there. Concerning this the experience of the Suez Canal is suggestive. The commerce which might have passed through this canal, that is, that for which it was the shortest route, in 1878 was 6,312,742 tons; but that which actually passed through it was but 3,291,535 tons. Scarcely a single sailing vessel uses it, though there is a large tonnage of such vessels which ply between the East Indies, British Australasia and China and British ports by way of the Cape of Good Hope, though that route is several thousand miles longer from many of the Asiatic ports. The explanation is that the prevailing winds and currents are more favorable to voyages by way of the Cape than to those by Suez. Now this is true also of the Cape Horn and Panama route. Central America is not on a favorable route for sailing.

A very large proportion of the whole tonnage now passing Cape Horn is engaged in carrying between Chili and Europe, and in carrying the guano and nitrate of soda of Peru and Bolivia. From Chili (Valparaiso) to Liverpool is 8,725 miles by the Straits of Magellan, and 7,350 by Panama; from the guano and

nitrate deposits of Peru it is 10,460 miles by Magellan and 5,900 by Panama; yet the unanimous opinion of merchants and others most familiar with trade, in letters published with this report, is that it would not use an isthmus canal, even if no tolls were charged.

More than this, although it is 13,700 miles from San Francisco to Liverpool by Cape Horn, and only 7,700 by Panama, it is the opinion of one merchant that the wheat shipments—by far the largest part of the total shipments from United States Pacific ports—would continue to go by Cape Horn, though another thinks that they would to a great extent be taken by steamers by the canal instead of by sailing vessels around the Cape.

Allowing for all these considerations what seems reasonable (but counting the wheat and all the traffic of United States Pacific ports as part of the isthmus commerce), Mr. Nimmo concludes that the commerce which actually would have used an isthmus canal, if one had been open that year, would have been about 1,500 vessels carrying 1,625,000 tons, or just about half the tonnage of the Suez Canal.

Evidently if a canal is to be supported by this tonnage at the proposed tolls of \$2 or \$3 per ton, it must be a much cheaper one than any that has yet been proposed, and if its construction is to be justified we must find a prospect of an early and great increase in the traffic. Now, the Japan traffic is controlled chiefly by the Pacific railroads, which are much the shortest routes. The only other traffic which the canal would be at all likely to command is that of the west coast of South America north of Bolivia, and the west coast of North America. But all this vast coast line has but a narrow strip of fertile country between it and the mountains and deserts, and nowhere has there been any considerable increase of commerce heretofore, or is there any prospect of a considerable increase hereafter, except in the Pacific States of the United States, whose exports to the Atlantic are chiefly wheat, wine and wool. The only one of these that requires a considerable tonnage is wheat, the production of which increases slowly in California, but promises to increase rapidly for a few years in Eastern Oregon and Washington. However much the traffic in general merchandise may grow, it will not help the canal much. The transcontinental railroad already gets most of it, and there will soon be two or three more lines to help it. It has already immensely reduced the shipments by way of the Panama Railroad. The value of these was more than \$70,000,000 in 1869, but it fell below \$19,000,000 the first year the railroad was open, and in 1879 was less than \$5,000,000. The tonnage of vessels via Cape Horn, which enter and clear the port of San Francisco from and to Atlantic ports, has decreased constantly since 1875, and the prospect is that there will be no great growth in this, as the California wheat cannot be expected to find a market in the United States, and there is no other great mass of low-priced freights. California and Oregon would use the canal chiefly, or almost wholly, for European traffic. If the growing commerce of Australia and New Zealand, China and Japan, were likely to profit by the canal, then we might expect that within a moderate space of time it could be supported. But the Australasian colonies have not, and are not likely to have, a very large commerce with the United States, because they export what we also export. Their trade is chiefly with Europe, and for that the route by the Suez Canal is as short as or shorter than that by Panama, and for China trade the Suez Canal is about as favorable to the United States, and to Europe very much shorter. The only oriental trade for which the Panama would offer an advantage is that of Japan with the United States, which is chiefly in those comparatively valuable goods which seek the shortest route by way of the transcontinental railroad. Thus it is substantially upon the commerce of the narrow territory between the mountains and the sea on the west coast of the two Americas that the canal would have to depend.

Mr. Nimmo's report is supported by 61 appendices, which are in the nature of vouchers for the facts adduced in the discussion. They have a very great value, and the whole document must be carefully studied by any one who would understand the question of the need for an interoceanic canal. It does not seem possible that capital can be raised for the enterprise unless what the report sets forth as facts can be controverted. All other so-called estimates of the traffic that would use the canal have been mere guesses in comparison with these carefully collected and detailed statistics, the preparation of which is a service to the world, by which it is likely to profit, and is extremely creditable to the Bureau which prepared it.

THE COTTON CROP OF 1879.

The *Commercial and Financial Chronicle* of Sept. 11 contained its usual annual review of the movement of the cotton crop of 1879, the crop-year having closed with the month of August. The full and trustworthy figures there given enable us to make some study of the cotton transportation of the year.

First, we note that the crop was decidedly the largest ever grown. In bales and pounds the crops of the past seven years have been as follows:

Crop of	Bales.	Pounds.
1875	4,170,388	1,956,742,297
1876	3,832,991	1,786,934,765
1877	4,669,288	2,201,410,024
1878	4,485,423	2,100,465,086
1879	4,811,265	2,309,908,907
1879	5,073,531	2,406,205,525
1879	5,757,397	2,772,448,480

The crop is usually reported in bales only, which vary in weight. In the above seven years they have varied from 468 to 481 lbs., and in different states this year they have varied from 466 to 510 lbs. The weight in pounds reported is the gross weight, including the sacking and ties of the bales.

The crop thus appears to have been 15½ per cent. greater in 1879 than in 1878, 20 per cent. greater than in 1877, and 32 per cent. greater than in 1876—certainly a notable increase for a crop confined to a country which receives very little foreign immigration.

The crops in bales for the ten years since the war and for ten years before the war are reported as follows:

Crop of	Bales.	Crop of	Bales.
1851	3,090,029	1865	2,228,987
1852	3,352,882	1866	2,059,271
1853	3,035,027	1867	2,498,805
1854	2,932,359	1868	2,438,039
1855	3,045,345	1869	3,154,946
1856	3,056,519	1870	4,352,317
1857	3,238,902	1871	2,974,351
1858	3,904,441	1872	3,930,508
1859	4,823,770	1873	4,170,388
1860	3,826,086	1874	3,832,991
Average	3,409,738	Average	3,164,170

It would appear from this that it took the South just about five years after the war to recover the cotton-producing capacity that it had reached before the war; for though the average production of the whole ten years was less after than before the war, the average of the five years from 1870 to 1874, inclusive (3,851,711 bales), was somewhat greater than that of the five years next before the war (3,787,952 bales). Since 1874 the production has shown a decided increase, and the average of the last five years (ending with 1879) average production has been 4,959,381 bales, which is 28¾ per cent. more than the average of the previous five years, and 31¼ per cent. more than the average of the five years next before the war. The very light of 2,476,000 bales in the five years following the war was due partly to the destruction of capital—the lack of proper appliances, or the means to get them, to cultivate to the best advantage—and to the demoralization of labor. Both these disadvantages were some time ago overcome, it would appear from the results obtained, and progress is begun again at a rate rather more rapid than at any time before the war. The average production of the five years from 1856 to 1860 was about 587,000 bales, or 18¼ per cent., more than in the five years next preceding, while, as we have seen, the average of the five years ending with 1879 has been 1,108,000 bales, or 28¾ per cent., more than the average of the five years previous.

The increase of 1879 over 1878, though very large (15½ per cent.) was not so great in amount or in proportion as that from 1874 to 1875 (23¼ per cent.), but it was probably much the largest increase ever made when the crops were fairly good both years. Cotton is a crop which has many enemies and which fluctuates greatly in yield, so that with equal care and skill the production per acre may be three times as much one year as another.

The receipts of the crop, in bales, at the several shipping ports on the seaboard, for the last five crop-years, (ending with August of the years named) are reported as follows by the *Chronicle*:

	1876.	1877.	1878.	1879.	1880.
Louisiana	1,415,069	1,195,035	1,391,519	1,187,365	1,504,654
Alabama	374,672	390,918	419,071	302,408	358,971
South Carolina	416,372	468,024	450,980	507,021	494,361
Georgia	524,825	491,800	604,676	704,752	741,425
Texas	488,640	506,634	461,823	582,118	494,885
Florida	17,434	23,089	21,818	56,716	17,531
North Carolina	107,836	128,037	153,505	135,815	106,245
Virginia	529,128	575,941	513,983	598,393	761,225
New York	198,693	121,213	145,412	147,808	216,731
Boston	71,396	100,206	110,992	108,996	214,324
Philadelphia	36,826	45,218	52,861	61,323	49,831
Baltimore	6,297	7,871	13,563	20,611	36,597
Portland	3,096	4,105	8,440	3,970	4,891
Total to ports	4,191,142	4,038,141	4,345,045	4,447,276	5,001,072
By rail to mills	333,146	300,282	317,620	474,255	576,725
Manufactured South	145,000	147,000	148,000	152,000	179,000
Total crops	4,669,288	4,485,423	4,811,265	5,073,531	5,757,397

The receipts of Louisiana are wholly at New Orleans, those of Alabama wholly at Mobile; those of South

Carolina include the receipts of Charleston, Port Royal and Beaufort (this year about 35,000 bales at the two last named places); those of Georgia are at Savannah and Brunswick (less than 5,000 bales at Brunswick); those of Texas are chiefly at Galveston, but this year about 13,000 bales at Indianola; Florida receipts are divided between the three ports of Pensacola, Jacksonville and Fernandina; those of North Carolina are nearly all at Wilmington; of those of Virginia about 161,000 bales this year, were at Richmond and Petersburg and the rest at Norfolk.

In every case the cotton is counted as the receipt of that port where it first arrives; large shipments (167,000 bales) were made from Mobile to New Orleans last year, and considerable ones from Galveston and Indianola to the same place; and large shipments are always made from the South Atlantic ports to Northern ports, all of which are counted only at the port where first received.

The percentage of the total crop received at each state's ports each year has been:

	1876.	1877.	1878.	1879.	1880.
Louisiana	30.3	26.7	28.9	23.4	26.1
Alabama	8.0	8.0	8.7	7.1	6.3
South Carolina	8.9	10.4	9.4	10.0	8.6
Georgia	11.2	10.9	12.6	13.9	12.9
Texas	10.5	11.3	9.6	11.5	8.6
Florida	0.4	0.5	0.4	1.1	0.3
North Carolina	2.3	3.1	3.1	2.7	1.8
Virginia	11.4	12.9	10.7	11.2	13.2
New York	4.3	2.7	3.0	2.9	3.8
Boston	1.5	2.2	2.3	2.2	3.7
Philadelphia	0.8	1.0	1.1	1.2	0.9
Baltimore	0.1	0.2	0.3	0.4	0.6
Portland	0.1	0.1	0.2	0.1	0.1
Total to ports	80.8	90.0	90.3	87.7	86.9
By rail to mills	7.1	6.7	6.8	9.3	10.0
Manufactured south	3.1	3.3	3.1	3.0	3.1
	100.0	100.0	100.0	100.0	100.1

There are few changes indicated by this year's movement, unless it be the continuation of a decline in the Mobile (Alabama) receipts and of an increase in the Virginia (chiefly Norfolk) receipts, and especially an increase in what is called the "overland" movement, that is, the shipments by rail to the Northern manufacturing without transfer at any port. Such shipments are made more or less from all parts of the South, but the most important ones are made from the two great interior cotton markets, Memphis and St. Louis, Memphis receiving by river from a vast extent of country, including much of Arkansas, and St. Louis receiving chiefly by rail from Arkansas and Texas. Several of the Southern ports have had their traffic greatly affected in certain years by the yellow fever. For some months that of New Orleans was almost destroyed in 1878-79; the Memphis business was ruined in the fall of 1878 and last year also, and some years earlier Savannah suffered in a similar way. The decrease at Galveston may be partly due to the great drought in Texas in 1879, though in spite of that perhaps the aggregate crop of the state was as large as ever before; but another cause is the increased northward movement from that state. The completion of the railroad from Houston to New Orleans may have a very unfavorable effect on the Galveston receipts, and when lines from Shreveport are completed to the East and to New Orleans there will be a further diversion of the Texas production from Galveston, though as that production increases very rapidly the Galveston receipts may not be absolutely decreased, and may even increase largely; only they are likely to be a smaller proportion of the whole Texas crop than heretofore. Consolidating the receiving ports into three groups, we have the following percentages at each group:

	1876.	1877.	1878.	1879.	1880.
Gulf ports	48.8	46.0	47.2	42.0	41.0
South Atlantic ports	34.2	37.8	36.2	38.9	36.8
North Atlantic ports	6.8	6.2	6.9	6.8	6.1

Baltimore and ports further north are included in North Atlantic ports. These show a notable increase last year over any previous year, though their proportion of the whole is still small. This increase, together with the considerable increase in "overland" shipments to mills, shows the tendency to ship the cotton as far as possible by rail, as indeed do the growing Norfolk receipts, nearly all of which come from districts which are nearer ports further south. The decrease in Gulf ports' receipts is in spite of the reduction made in 1878-9 by the yellow fever at New Orleans. The latter place gained 2.7 per cent., but this was more than balanced by losses at Mobile and Galveston. The decrease at South Atlantic ports extends to all of them except Norfolk. Those south of Norfolk, which received 27.7 per cent. of the crop of 1878, had but 23.6 per cent. of the crop of 1879, while Norfolk gained 2 per cent.

The great distances that cotton is shipped by rail now prevents the receipts of any port being a measure of the production of the adjacent territory. Cotton from Arkansas, Mississippi and Tennessee goes to swell the receipts of Savannah and Norfolk.

The exports from the several ports for the past two years have been:

	1880.	1879.	Inc. or Dec.	P. c.
New Orleans	1,441,941	1,243,746	Inc.	198,195 15.9
Mobile	111,687	123,214	Dec.	11,527 9.3
South Carolina	344,774	370,260	"	25,486 9.1
Georgia	424,082	461,904	"	37,822 8.2
Texas	301,874	353,817	"	51,943 14.7
Florida	596	17,035	"	16,439 98.5
North Carolina	35,783	68,011	"	32,228 47.4
Virginia	257,065	203,546	Inc.	53,519 26.3
New York	650,826	370,847	"	279,979 75.5
Boston	133,102	124,470	"	8,632 7.0
Philadelphia	41,363	26,389	"	15,204 57.6
Baltimore	122,973	95,303	"	29,870 28.2
San Francisco	215	127	"	88 69.3
Total	3,865,621	3,467,565	"	398,056 11.5

The exports naturally do not correspond with the receipts, not only because a greater or less portion of the receipts are not exported, but sent North for domestic consumption, but also because the receipts given are the primary receipts only, and in some cases, notably at New York and New Orleans, are considerably less than the total receipts.

First we notice that the increase in the total exports over 1879 was but 11½ per cent., while the increase in the crop was 15½ per cent. And the proportion of the crop exported was 67¼ per cent. for 1879, against 68¼ for 1878. However, the difference in stocks on hand accounts for a large part of the excess not exported, and the *Chronicle* estimates that the increase in domestic consumption has been but 9 per cent.

Returning to the table of exports, we see much greater changes than are observable in the table of receipts. With the exception of New Orleans, there are considerable decreases at all ports south of Norfolk, and large increases at all the Northern ports. Dividing into three groups, as for receipts (but here giving quantities, and not proportions of the total), we have the following:

	1880.	1879.	Inc. or Dec.	P. c.
Gulf ports	1,855,502	1,730,777	I.	124,725 7.8
South Atlantic ports	1,002,310	1,120,752	D.	118,442 6.9
North Atlantic ports	947,809	617,036	I.	330,773 53.6

The increase in New Orleans exports overbalanced the decrease at the other Gulf ports, but the large increase at Norfolk did not prevent a decrease at the South Atlantic ports, while there was an immense increase of more than 50 per cent. in the exports of the North Atlantic ports, equal to nearly five-sixths of the total increase in cotton exports. We have seen no explanation of this sudden increase in the Northern exports, but we imagine it to be on account of the great increase in grain exports, especially by steamers. Cotton is esteemed better cargo for part of the space in the vessels, and a great increase in the shipping arriving for grain increases correspondingly the room for cotton. None of the Southern ports except New Orleans has any grain exports, and at New Orleans the vessels come for cotton and not for grain, and only supplement their cotton cargoes with grain, just as in New York they supplement their grain cargoes with cotton.

The percentage of the total exports shipped from each port for nine years has been:

	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
New Orleans	43.4	44.9	40.4	37.1	41.9	39.5	43.4	44.2	37.9
Mobile	7.0	5.9	4.7	4.0	7.5	7.2	4.9	3.6	2.9
South Carolina	6.7	6.9	8.7	10.2	8.2	11.1	6.1	10.9	8.9
Georgia	15.1	14.6	15.1	16.7	11.3	9.8	10.6	12.3	11.9
Texas	5.9	7.8	9.7	8.3	7.3	8.5	6.7	10.2	7.8
Florida	...	...	...	...	...	...	0.3	0.5	0.0
North Carolina	...	...	...	...	...	...	...	...	...
Virginia	...	...	...	...	...	...	...	...	...
New York	19.0	21.4	17.1	16.6	13.4	14.2	12.0	19.7	16.8
Boston	0.7	0.4	0.9	1.4	1.8	2.5	3.8	3.6	3.4
Philadelphia	...	...	...	...	...	...	...	...	...
Baltimore	0.7	0.7	1.5	1.7	0.9	1.0	1.7	2.7	3.2
Other ports	0.3	0.4	...	...	...	...	0.3	...	...
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Taking the percentages for each group of ports for nine years, as we did the quantities above for the past two years, we have:

	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
Gulf Ports	58.3	56.8	54.8	50.3	56.7	55.2	55.0	49.7	48.0
S. Atlantic ports	21.0	20.3	24.7	49.0	24.2	26.1	26.4	32.6	27.5
N. Atlantic ports	20.7	22.9	20.5	20.7	19.1	18.7	18.6	17.7	24.5

Here the tendency of the export movement is shown quite plainly. Since 1876 it has been downward at the Gulf ports, which never exported so small a proportion of the whole as last year. The South Atlantic ports, though having a smaller share than the year before, still had a larger percentage than in any other year but one, and so may be considered to have more than held their own when we consider the fact that an abnormal trade was forced upon them by the yellow fever at New Orleans in the fall of 1878. But the greatest change is in the exports of the North Atlantic ports, which, having decreased steadily since 1873, have suddenly increased nearly one-half in percentage and more than one-half in amount. For four years previous they had been but about one-third of the Gulf exports; last year they were more than one-half. It is noticeable that the decrease in Gulf exports has been since the improve-

ment of the mouth of the Mississippi, but the decrease has not been chiefly at New Orleans, which, however, has not of late years quite held its old position as a cotton exporter. There can be no doubt that the establishment of a large grain export business there will tend to increase its cotton exports, by giving vessels fuller loads and thus enabling them to carry cotton cheaper; but that city has much more to hope from the recent completion of its railroad connection to Houston, and from the line to Shreveport now under contract. Hitherto New Orleans has had water connection only with the vast cotton country west and northwest of it, which is where the increase in acreage and production occurs; with railroad connection it may profit as St. Louis and Norfolk have profited.

There are several important interior cotton markets in the country, and last year there were receipts of more than 100,000 bales at seven such markets—at St. Louis, Memphis, Cincinnati, Augusta, Ga., Montgomery, Selma and Atlanta. The greatest changes last year compared with the previous year are increases of 22 per cent. at Atlanta, of 46 per cent. at St. Louis, and of 26.6 per cent. at Cincinnati. St. Louis now leads as an interior cotton market, exceeding Memphis in receipts by 76,000 bales—18½ per cent. These markets are now built up chiefly by the railroads, and some of them have very recently become important. The growth of the receipts at some of these is shown below:

Crop of	Montgomery	Selma	Rome	St. Louis	Cincinnati
1872.....	82,645	46,991	.....	59,709	137,575
1873.....	33,919	60,066	.....	103,767	195,895
1874.....	59,319	75,261	27,138	134,631	151,980
1875.....	72,727	88,563	32,651	245,031	185,376
1876.....	67,337	69,330	33,100	219,010	175,527
1877.....	106,284	92,681	48,100	249,074	184,805
1878.....	132,387	100,609	62,133	332,437	248,069
1879.....	124,384	111,992	86,721	485,992	314,219

The business of St. Louis has been substantially created since the extension of the Iron Mountain road into Arkansas. It has increased 260 per cent. since 1874 and nearly 190 per cent. since 1875. But this great growth is hardly more remarkable than the increases at Montgomery, Selma and Rome, which are not only local markets, but are in an old cotton country where production cannot be expected to increase greatly, as it does in Texas and Arkansas, from which St. Louis draws its chief supplies. The rapid growth of receipts at Dallas and Jefferson, Texas, and at Shreveport, La., was to be expected, their railroad connections having been recently completed.

The crop of the last year was evidently unusually profitable to the planters and the carriers. In spite of the unexampled crop, the revival of the demand was such as to make good prices, and the effect is seen in Southern prosperity such as has not been known before since the war. This encouraged an extension of planting this year, and enabled the planters to provide what was needed in the way of stock, tools and fertilizers to cultivate it thoroughly. The season was generally favorable, and down to a time not more than four weeks ago the prospect was for at least as good a yield as last year, with an increased acreage. But since that time great damage has been done by excessive rains, which seem to have prevailed generally throughout the cotton country, and some of the reports indicate very serious losses. Damage from such causes is usually exaggerated, however, and no estimate of the present crop can be made without more information than is at hand now. The result is important to nearly every railroad in the South, which another great crop at good prices would have made as prosperous, probably, as any part of the country.

BRIDGE ENGINEERING.

The science of bridge engineering is far younger than most people realize, and furnishes an encouraging example of what rapid progress can be realized in these days, even in the most neglected department of knowledge, when general attention has once been directed to it.

We were struck with this fact by happening on a book notice of the first treatise on bridge construction which could be considered at all adequate for modern requirements, Haupt's "General Theory of Bridge Construction," which appeared in 1851, but did not attain general circulation until some years later. This book was so decided an advance on its predecessors that as late as 1864 it was said of it in the *Atlantic Monthly* that it was "not only the first, but up to the present time the only publication in which the action of the parts in a complicated system is explained, and the direction and intensity of each and every strain brought within the reach of mathematical formulæ, and rendered accurately determinable. Before the appearance of this book it is probable that not another engineer in the world could be found able to calculate the strain upon every form of bridge truss, but only upon certain simple

forms and combinations." This is certainly strong language, and we think not strictly true, for Whipple's book on bridges, at least, had appeared in 1847, and although not so general in form as Haupt's, was sound enough so far as it went, which can hardly be said of every thing in the latter's treatise, notably his recommendation that the counters should be placed under a permanent strain, which the passage of a moving load would simply relieve for an instant.

Nevertheless, considering how entirely unoccupied the field of bridge engineering was at that early day, Haupt's "General Theory" was a book of singular merit and completeness. An especially noteworthy point is his repeated expositions that the *limit of elasticity*, and not the ultimate strength, is the question to be considered; a fact which, nevertheless, it has taken a whole generation for engineers at large to learn. That dangerous delusion, a "factor of safety of six," finds no countenance in General Haupt's volume, although it has figured so extensively in engineering specifications from that time to this. On the contrary, he distinctly lays down that "a permanent set is incipient fracture," and fixes as low a strain as 15,000 lbs. per square inch as the ultimate elastic limit of common merchant iron.

About the most striking fact noticeable in this volume, however, is that every one of the eighteen or twenty types of which drawings are given is a decided antique. The man who should design a bridge like any one of them at the present day would be laughed at. This rapid and total change in less than two decades is the more remarkable by contrast with the equally singular persistency in the types of the rolling stock, for the latter have not changed in any important respect since their first introduction, either in this country or Europe.

Singularly enough, too, this rapid progress in bridge-building dates from the time when this department of engineering began to be recognized as a distinct specialty, and engineers began to make a *business* of bridge-building as well as a profession; or, in other words, began to have a direct pecuniary interest in getting as much bridge for a dollar as possible. There are not wanting those who object to the contract system for this very reason, claiming that it introduces great temptation to pare a little too close. Nor can it be denied that there is much truth in this argument when the contractor is permitted, as he generally has been heretofore, to be his own judge as to the sufficiency of his margin of safety. On the other hand, a strong argument might be made that the system, on the whole, tends to safety even without such supervision, on the ground that it sharpens the intellect and "increaseth knowledge" very much faster than it weakens the feeling of moral responsibility. Bridge contractors have built and sold a great many poor and dangerous bridges, but we doubt if any bridge could be found quite so shamelessly and utterly defective as the roof of the Madison square garden, for the "design" of which salaried men were alone responsible, and the two worst bridge disasters on record, the Ashtabula and Tay disasters, were, as it happens, also built by salaried men and not by the much-abused contract system. The moral of these and many other facts seems to be that it is best that the designer and the contractor should be one person, but that the purchaser should maintain a rigid supervision of his work. The sole difficulty in the workings of the contract system, it appears to us, is that bidders are not protected from unfair competitions by proper care to have all designs submitted of equal strength and all workmanship and material of equal quality. If these things were properly attended to, the contract system would be an unmixed blessing. How long might we have waited for salaried men to open the South Pass of the Mississippi, or erect the Kentucky River bridge?

Bridge-builders, by the way, would be placed at far less disadvantage if the simple process of preparing a strain-sheet were more generally understood by the "general practitioner" of engineering. We have yet to see the treatise which explains this in a thoroughly satisfactory manner as simply as the subject admits. A very wrong impression prevails with many that bridge-designing is an excessively mathematical and scientific art, requiring great theoretical knowledge for its successful practice. This is true, of course, of the higher walks of the profession; but it is not true at all of the ordinary hum-drum routine of designing ordinary structures under 200 to 250-foot span. The mathematical part of such work is as much mechanical as well need be, and skill in it, and in it alone, has hardly a quotable market value. It is in the details that the skill of the engineer becomes conspicuous and the existence of the contracting engineer is justified.

Cutting Rates at Chicago.

The Wabash, St. Louis & Pacific has but recently opened

its line to Chicago for business, and owing to the delay in completing the Chicago & Western Indiana, by which it will reach its permanent stations, it has to make use of temporary freight sheds at Seventeenth street, considerably further from the business centre than its permanent quarters, and of a subsidiary passenger station at Twenty-second street, about a mile and a half further out than the Lake Shore and Rock Island depot. To "equalize" matters, it has announced its intention to make its tickets from Chicago good for an omnibus ride to its station, which to the other railroad stations costs 50 cents (with baggage), and it seems to have imagined a way to make up for the comparative inaccessibility of its temporary freight station, as indicated by the following circular from its General Freight Agent, dated Sept. 25, directed to station agents and marked "private," which the *Chicago Tribune* has inconsiderately made public:

"DEAR SIR: Shipments made by the following merchants from Chicago, viz. ——— will be way-billed to your station at 2½ cents per 100 lbs. less than printed tariff, the 2½ cents to be billed as advance charges, with the notation 'Extra Drayage.' You will take the way-bills to account just as billed, but must be particular to show on your expense bills the total amount as one item. For instance, suppose the tariff rate is 20 cents; the bill will be made at 17½ cents freight charges and 2½ cents advance charges, but on your expense bill you must show the total charges at 20 cents as one item. Dealers at your point must know nothing of this, as it is a private arrangement made for our own protection."

A difference of 2½ cents per 100 lbs., or 50 cents per ton, would in many cases pay the whole cost of carting to the temporary station, not to say the additional expense over that of hauling to the stations of competing roads, one of which, however, and one of the most important (the Chicago, Burlington & Quincy) is equally remote from the business centre. It is unquestionable that any marked inferiority in the terminus of a road anywhere will have to be allowed for in the rate, sooner or later, and an allowance on this account would probably not be seriously objected to by its rivals when once it was admitted that it only put it on an equality with them; but a secret rebate made by special contract with certain shippers, and which may be made with those whose freight is nearer the station in question than to any other, is another matter, and will certainly be treated as a cut.

To know whether the Wabash has violated any of its agreements with other roads, however, this circular does not suffice; in addition it must be known to what station the circular has been sent. The only agreement publicly known which it might violate is that of the Southwestern Association, and to do this it must be issued to agents at "Missouri River points." But the road has numerous points common to it and the Illinois Central, the Chicago & Alton, the Chicago, Rock Island & Pacific and the Chicago, Burlington & Quincy, and it is usual for companies having such common points to agree upon rates to and from such points and mutually promise to maintain them. The Wabash, however, never having had a line from Chicago before, may have made no such agreements, and it has not yet been awarded any share of the Southwestern Association business to and from Chicago, though it has agreed to submit its claim for a share of such business to arbitration so soon as its Chicago entrance is completed. But the absence of an agreement, though it may acquit the company of a violation of its promises, will not prevent a conflict, of course. The railroads do not carry on railroad wars because some one has broken faith, but because some one is taking their business away by rebates and the like, whether public or private, and the circular is sufficient evidence that the Wabash intended to get business secretly, and that it knew the method would be objected to by its rivals. In the nature of things it could not remain a secret long, and the Wabash knew that perfectly well; the policy is one perfectly familiar and commonly practiced in the competition of roads, though circulars concerning the methods do not often come to light.

Doubtless the Wabash has been exasperated by the apparently interminable delay in getting to its station grounds in Chicago. It enters over the Chicago & Western Indiana, and that road, substantially completed six months ago, has been fought in the courts with such success that it is still kept from laying its track over the small distance that will bring it to its terminus. As is almost always the case under such circumstances, the railroads whose tracks or grounds it would cross have been most active in this litigation, a course to which they are impelled by the fact that every day a competitor is kept out of so important a traffic centre is money in their treasuries. There can be no question that the final issue of the litigation will be that the new road will be completed, but in this the railroads, like individuals, take the course which they think will profit them most, and there is nothing in their policy which was not to be expected. Moreover, in this case the new road has had the opposition of the city authorities and also a very decided popular hostility on the part of numerous small lot-owners, who considered their property injured by the road's passing near it. This opposition has also engaged in litigation, and it is only within a week or so that the obstacles which it offered have been overcome, so that it is [questionable whether the railroad opposition has caused much delay after all. But, however produced, a delay of three to six months which prevents for that time the utilization of property that has cost millions of dollars is naturally exasperating, and leads the owners of the idle property to resort to any expedients that may enable them to set it at work.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:
New York, Lake Erie & Western, annual meeting, at the office in New York, Nov. 30. The register for bondholders entitled to vote will be opened from Oct. 1 to Oct. 30.
Ohio Central, special meeting, in Columbus, O., Oct. 18, to vote on the question of authorizing additional stock and bonds to build a branch line.

Dividends.

Dividends have been declared as follows:
East Tennessee, Virginia & Georgia, 3 per cent., semi-annual, payable Oct. 1.
Nashua & Rochester (leased to Worcester & Nashua), 1½ per cent., semi-annual, payable Oct. 1.
Vermont & Massachusetts (leased to Fitchburg Railroad), 3 per cent., semi-annual, payable Oct. 7.
Sioux City & Pacific, 3½ per cent., semi-annual, on preferred stock, payable Oct. 1.
New London Northern, 1½ per cent., quarterly, payable Oct. 1.
Boston, Clinton, Fitchburg & New Bedford, 2½ per cent., semi-annual, on the preferred stock.
Missouri Pacific, 1½ per cent., payable Oct. 15. The dividend will be paid on the new consolidated stock only; old stock must be converted to entitle the holders to payment.

Foreclosure Sales.

The *Green Bay & Minnesota* road will be sold in Milwaukee, Wis., Nov. 13, under a decree of foreclosure granted by the United States Circuit Court. The road extends across Wisconsin from Green Bay to Marshland on the Mississippi, 209 miles, with branches from Marshland to Eastmoor, 3 miles, and from Onalaska to La Crosse, 7 miles, making 219 miles in all. The company has also the right to use the Chicago & Northwestern track from Winona to Onalaska, 26 miles. By the report for 1879 the company had \$3,200,000 first-mortgage bonds, \$779,860 second-mortgage bonds and \$1,710,617 floating debt. The earnings last year were \$348,690; net earnings, \$144,133; or about 4½ per cent. on the first-mortgage bonds. The road is chiefly owned by John I. Blair and associates.

ELECTIONS AND APPOINTMENTS.

Alabama Great Southern.—Mr. Cabell Breckenridge, of Covington, Ky., has been appointed Chief Engineer, in place of the late Mr. Hayter. Mr. Breckenridge was connected with the Chesapeake & Ohio during the construction of the Western Division.

Mr. R. E. Ulbright, of Meridian, Miss., has been appointed Auditor, in place of H. W. Crittenden, deceased.

Ashland Coal & Iron Railway.—The officers are as follows: John Mears, President; John G. Peebles, Vice-President; Robert Peebles, Secretary and Treasurer; W. F. Gaylord, General Superintendent; Douglas Putnam, Jr., Assistant Superintendent. Offices in Ashland, Kentucky.

Atlantic & Pacific.—Mr. George T. Wiswell is in charge of construction on this road, with office in Albuquerque, New Mexico.

Augusta & Knoxville.—The officers are: E. F. Verdery, President; A. J. Twigg, Chief Engineer and General Superintendent; John W. Clark, Treasurer. Offices in Augusta, Georgia.

Buffalo, Pittsburgh & Western.—The directors of this new company are: George Beals, Thomas Rutter, Buffalo, N. Y.; Conrad N. Jordan, Brayton Ives, H. A. V. Post, New York; E. W. Clark, E. A. Rollins, Charles S. Hinchman, C. H. Clark, T. Guilford Smith, George T. Tyler, Philadelphia; George Wm. Ballou, Boston.

Chicago, Burlington & Quincy.—Mr. D. W. Hitchcock, for some time past General Western Passenger Agent, has been appointed General Agent, with office in Chicago.

Chicago, St. Paul, Minneapolis & Omaha.—General Superintendent Winter has issued the following circular: "On and after Oct. 1, 1880, that portion of the Western Division between St. Paul and St. James, including the Blue Earth Branch, will be known and operated as the St. Paul Division. That part of the line between St. James and Sioux City, including the Black Hills Branch, Sioux Falls line, and Rock River Branch, will thereafter be known and operated as the Sioux City Division. Mr. J. F. Lincoln is appointed Superintendent of the Sioux City Division, with headquarters at Sioux City. Mr. T. P. Gere is appointed Superintendent of the St. Paul Division, with headquarters at St. Paul. Appointments to take effect Oct. 1, 1880."

The following additional circular is dated Sept. 27: "The mechanical departments of the various divisions of this line have been consolidated, and will hereafter be operated under one general head. Mr. M. Ellis is appointed Master Mechanic, with headquarters at Shakopee, Minn., to take effect Oct. 1, 1880."

Connotton Valley.—Mr. W. M. Parker has been appointed Superintendent, in place of W. N. Moffett, resigned. Mr. Parker was formerly Superintendent of the Boston & Lowell road.

Dorchester & Delaware.—Mr. Thomas E. Wright has been appointed Superintendent, in place of James M. Murphy.

East Alabama.—The officers of this company, successors to the East Alabama & Cincinnati, are: President, Benjamin Perkins; Secretary, Richard Irvin, Jr.; Treasurer, Osmond Welch; Superintendent, W. W. Barnes. The Superintendent has his office in Opelika, Ala.; the other officers at No. 41 Wall street, New York.

Flint & Pere Marquette.—The following are announced as officers of this road under the reorganized company: Second Vice-President and General Manager, H. C. Potter; Superintendent, Sanford Keeler; Treasurer and Secretary, H. C. Potter; Assistant Treasurer, L. C. Storr; Auditor, G. W. Ledlie; General Freight Agent, David Edwards; General Ticket Agent, J. P. Nourse. They are all re-appointments.

Indiana, Bloomington & Western.—Mr. C. E. Henderson, late Auditor, has been appointed Assistant General Manager, a new office. The office of General Superintendent has been abolished.

Kankakee & Southwestern.—The directors of this new consolidated company are: Wm. K. Ackerman, Benjamin F. Ayer, John Buckingham, John Dunn, E. T. Jeffery, W. J. Maurice, D. B. Stewart, Joseph F. Tucker, J. C. Welling. It is controlled by the Illinois Central.

Kansas City, Ft. Scott & Gulf.—Mr. L. W. Towne has been appointed Superintendent, in place of T. F. Oakes, who has gone to Oregon. Mr. Towne was Superintendent of the Atchison & Nebraska until the recent lease was made.

Kansas City, Lawrence & Southern.—Mr. L. W. Towne has been appointed Superintendent, in place of T. F. Oakes. He is also Superintendent of the Kansas City, Ft. Scott & Gulf.

Knoxville & Augusta.—The officers of this company are: President, R. M. Hood; Superintendent, J. M. Hood. Offices at Maryville, Blount County, Tennessee.

Louisville & Nashville.—At the annual meeting in Louisville, Oct. 6, the following directors were elected by a vote of over 80,000 shares: H. Victor Newcomb, E. H. Green, E. F. Alexander, Geo. C. Clark, C. C. Baldwin, Clarence H. Clark, B. F. Guthrie, H. C. Murrell, James T. Woodward, George A. Washington and Logan C. Murray. The only change is the retirement of Mr. Foster in favor of James T. Woodward. The new board re-elected H. Victor Newcomb, President; E. H. Green, First Vice-President; General E. F. Alexander, Second Vice-President; W. Ranney, Secretary; A. M. Quarrier, Assistant to the President. Mr. Newcomb stated that his health would not permit him to retain the position and that he wished to resign at as early a day as practicable, to take effect no later than Dec. 1, and sooner if the business of the company admitted. The board appointed a committee to take action upon the resignation of President Newcomb, who nominated as his successor Edward H. Green, First Vice-President, who was thereupon elected to fill the vacancy which will occur when Mr. Newcomb resigns.

Manhattan.—The following circular is dated Oct. 1: "Mr. M. K. King having resigned the position of Purchasing Agent, the duties of that office will be assumed by the General Manager until further notice."

New York City & Northern.—The officers of this company are: President, R. M. Galloway; Secretary, Calvin Goddard; Treasurer, A. J. Thomas; Chief Engineer, Sebastian Wimmer; General Freight and Passenger Agent, J. C. Wilson; Master Mechanic, M. McNally.

Northern (New Hampshire).—Mr. C. S. Mellen having resigned his position on this road, all matters relating to through freight and passenger business will be in charge of W. F. Simons, General Freight and Ticket Agent. Mr. George K. Hazeltine has been appointed Cashier.

Northern Pacific.—The new board has re-elected Frederick Billings, President; Samuel Wilkeson, Secretary; Robert S. Belknap, Treasurer; George Gray, General Counsel.

Rutherford & Ridgewood.—Officers of this new company (a reorganization of the Bergen County Company, and controlled by the Erie) are as follows: President, Hugh J. Jewett; Vice-President, Cortland Parker; Secretary, A. R. Macdonough; Treasurer, Bird W. Spencer.

Springfield, Effingham & Southeastern.—The following officers have been appointed: General Manager, E. Pratt Buell; Secretary and Treasurer, W. C. Lyon; Financial Manager, Wm. Sturgess. The road continues to be held by the Receiver, Gen. J. C. Black.

Union Pacific.—The following circular is dated Oct. 1:

"Mr. Frank D. Brown has this day been appointed Cashier in place of Mr. Nathan Shelton, resigned. Drafts for tickets and car service balances, due from other companies, will be drawn by F. D. Brown, Cashier, and drafts for like balances due from this company should be drawn upon him."

Wabash, St. Louis & Pacific.—The following circular from General Manager John C. Gault is dated September 28: "This company will take possession of the Toledo, Peoria & Warsaw Railway Oct. 1, under a lease made between the two companies. From and after that date it will be operated as a part of this road, and in connection with the Missouri, Iowa & Nebraska Railway, will be called the Peoria & Iowa Division. Mr. W. F. Merrill has been appointed General Superintendent of this division in charge of the operating department. Until further notice his office will be at Peoria, Ill."

"A full supply of stationery and blanks will be furnished agents. Traveling auditors will call upon the agents as soon as possible and give full instructions for transacting business in accordance with the present system of this company."

"All communications relative to freight matters should be addressed to A. C. Bird, General Freight Agent, St. Louis. Communications relative to passenger business and advertising to H. C. Townsend, General Passenger Agent, St. Louis. Communications relative to tickets, rates and divisions to George H. Daniels, General Ticket Agent, St. Louis. Car and mileage reports should be made to C. P. Chesbro, Car Accountant, St. Louis. Remittances should be made to W. B. Corneau, Treasurer, St. Louis. Station reports and all communications relative to accounts should be addressed to D. B. Howard, Auditor, St. Louis. All requisitions for supplies should be made to R. W. Green, Purchasing Agent, St. Louis, and requisitions for stationery and blanks should be made to P. E. Green, Stationer, St. Louis. Col. W. H. Blodgett, St. Louis, is General Solicitor of the company, to whom all communications relative to legal matters should be addressed."

"Each department will furnish detailed instructions as to the transaction of its business, and all agents and employees are hereby requested to carry out these instructions fully. Agents and employees will retain their present positions until otherwise notified."

PERSONAL.

—Mr. W. N. Moffett has resigned his position as Superintendent of the Connotton Valley Railroad.

—Mr. Isaac D. Barton has resigned his position as General Superintendent of the Indiana, Bloomington & Western road.

—Col. James N. Orr has resigned his position as Division Freight Agent at Columbus, O., for the Baltimore & Ohio Railroad.

—Mr. John Reid, Jr., for many years a prominent merchant of Mobile, Ala., and long a director of the Mobile & Ohio Company, died at his residence in Mobile, Sept. 29.

—Mr. Daniel McCool has resigned his position as Assistant Superintendent of the Buffalo Division of the New York Central & Hudson River road. It is understood that the office will be abolished.

—Mr. Nathan Shelton, for many years cashier of the Union Pacific, has resigned and will enter into business as a dealer in investment securities at Omaha. Mr. Shelton is also Treasurer of the Omaha Water Works, and the Omaha White Lead Works.

—Mr. Albert F. Beach, a well-known railroad contractor, died in New York, Oct. 3, aged 50 years. He had had contracts on the Erie, in Kentucky, in Tennessee and in Pennsylvania. His last work was the Drifton Branch of the Lehigh & Susquehanna road.

—Capt. Henry Ayres, one of the oldest railroad conductors in the United States, died at his residence in Owego, N. Y., Oct. 5, aged 80 years. He began on the Harlem road

Kansas City, Lawrence & Southern.—Extended from Wellington, Kan., west to Harper, 40 miles.

St. Paul, Minneapolis & Manitoba.—Track has been laid on the Grand Forks, Fargo & Burnsville loop line from Grand Forks, Dak., south 31½ miles. Also on the Breckenridge & Maple River Branch from Breckenridge, Minn., northwest into Dakota, 24 miles. The Brown's Valley Branch is extended from Wheeler, Minn., to Graceville, 19½ miles.

Northern Pacific.—The Casselton Branch is extended north to Elm River, Dak., 14 miles.

Galveston, Harrisburg & San Antonio.—Track is laid on the La Grange Branch from Columbus, Tex., west by north to Ellinger, 18 miles.

Missouri Pacific.—The Lexington & Southern Branch is completed from Junction, near Harrisonville, Mo., south to Butler, 28 miles.

Shenandoah Valley.—Extended from Milford, Va., south by west to Luray, 12 miles.

Michigan Air Line.—Extended from Rochester, Mich., westward to Pontiac, 10 miles.

Chicago, Rock Island & Pacific.—Track has been laid on the Avoca, Macedonia & Southwestern Branch from Avoca, Ia., south to Carson, 17½ miles. Also on the Keosauqua Branch from Mt. Zion, Ia., to Keosauqua, 4½ miles.

Western North Carolina.—Extended from Gudger's Ford, N. C., west to Asheville depot, 6 miles.

Sioux City & Pacific.—Extended from Oakdale, Neb., northwest to Neligh, 5 miles.

Atlantic & Pacific.—Track laid from Isleta, N. M., west 25 miles.

Burlington & Missouri River in Nebraska.—The Republican Valley line is extended from Hardy, Neb., east to Harbine, 13 miles.

Toledo, Delphos & Burlington.—Track has been laid on the gap between Waterville, O., and Holgate, 28 miles. Also from Warren, Ind., west by south to Marion, 18 miles. Gauge, 3 feet.

Savannah, Florida & Western.—On this company's new Waycross & Jacksonville line track has been laid from Waycross, Ga., southeast 6 miles. Gauge, 5 ft.

Detroit, Butler & St. Louis.—The first track is laid from Romulus, Mich., east by north 11 miles.

This is a total of 331 miles of new railroad, making 3,938 miles thus far this year, against 2,328 miles reported at the same time in 1879, 1,320 miles in 1878, 1,505 miles in 1877, 1,719 miles in 1876, 861 miles in 1875, 1,125 miles in 1874, 2,867 miles in 1873 and 5,066 miles in 1872.

WATER RATES have advanced materially during the past week. Lake freights, which the week before had advanced from 3¼ to 4¼ cents a bushel for corn from Chicago to Buffalo, went up by degrees a full cent, reaching last Wednesday 5½ cents for corn and 5¼ for wheat from Chicago and Milwaukee to Buffalo, which is an advance of 50 per cent. within ten days. Canal rates, which on Wednesday of last week were 5½ cents a bushel for corn and 6 for wheat from Buffalo to New York, have changed less, but last Wednesday were 6¼ for wheat and 6 for corn. Ocean rates, which the week before were quoted at 5¼d. to 5½d. for grain by steam, from New York to Liverpool, were the same a great part of the following week, but reached 6¼d. or 6½d. Tuesday, and 6½d. was bid Wednesday.

The advances in lake and canal rates have come later than usual, and the canal rates especially are lower than they have been at this time of the year. Below, the rates for the first week of October are given for the past four years:

	Lake.	Canal.	Ocean.
1877.....	4¼@5¼	7 @10	8¼d.@9d.
1878.....	3¾@4	8 @8½	6d.
1879.....	5¼@7¼	7¼@9½	8¼d.@9¼d.
1880.....	4 @5¼	6 @6½	5½d.@6½d.

Thus all rates are considerably lower than in the corresponding week of last year. Then to ship a bushel of wheat from Chicago to New York cost about 16 cents, and to Liverpool 34 cents. This year the cost was about 13 cents to New York and 25 to Liverpool. It is especially notable that the canal rates were lower this year than in any other of the four years, and statistics of previous years show us that they were also lower than ever before in October. This limits the traffic which the railroads are able to obtain, and it further prevents an advance of rates such as has been common about this time. Last year an advance from 30 to 35 cents was announced Oct. 2 and went into effect Oct. 13. Ten days' notice of an advance must be given, and no one seems disposed to advocate one now, nor will one be probable until there has been a considerable further advance in lake and canal rates. Wednesday the cost by water from Chicago to New York was about 13½ cents, against 18 cents by rail. When the advance was made last year the water was nearly as high as the rail rate.

THE BROTHERHOOD OF LOCOMOTIVE ENGINEERS will hold its annual convention at Montreal, Canada, beginning Oct. 20. Delegates are generally passed free over the railroads to and from the convention, and on many lines their wives also. Arrangements have been made to accommodate them in Montreal at the Windsor House. For the benefit of those who would like to enjoy the beautiful trip down the St. Lawrence, an arrangement has been made with the Richelieu & Ontario Navigation Company to carry members from Kingston to Montreal by its steamboats for \$2.50 each, the regular rate being \$4.50. This journey takes the whole day, the boat leaving Kingston at 5 a. m. and reaching Montreal at 7 p. m., and as the members of the Brotherhood are always on the road it is thought that this opportunity to make one of the most beautiful journeys in the world by water will be welcomed by many of them.

in 1838, and in 1842 went to the Erie, on which he ran until a few years ago, when he retired, the company granting him a pension. He was a prominent Freemason, and before the war was known as an active abolitionist.

—Mr. G. T. Wiswell has resigned his position as Road-Master of the New York, New Haven & Hartford road, to accept a position in charge of construction on the Atlantic & Pacific road, with office at Albuquerque, New Mexico. Mr. Wiswell was formerly on the Troy & Greenfield road, and was, until recently, the very active and efficient Secretary of the International Road-Masters' Association, of which he was one of the chief originators.

—A correspondent of the Chicago Tribune, in a letter which gives an account of several persons who may be Republican candidates before the Wisconsin Legislature next winter for the position of United States Senator, to succeed Mr. Angus Cameron, speaks as follows of Mr. Charles L. Colby: "This gentleman is much better known in Wisconsin as a business-man and the President of the Wisconsin Central Railroad than as a politician. Indeed, politician he is not, except in the best and truest sense—in the sense that he takes his turn in the Legislature and makes a few excellent Republican speeches whenever he is called upon. The railroad men of the United States are as a class among the most intelligent, capable, big-brained and energetic of our most respected citizens, and Mr. Colby is a man of mark among them. His appearance in the United States Senate would be a good omen, and indicative of wise and beneficent legislation that would promote business, develop resources, encourage industry and stimulate prosperity. He is an orator of no mean order, and a high-minded, practical man of affairs, who is well fitted by nature and education to fill any position, however high."

—The Mayor and City Council of Baltimore, and Mr. Robert Garrett, in behalf of the President and directors of the Baltimore & Ohio Railroad Company, have tendered a special invitation to the venerable Peter Cooper, of New York, to be present at the celebration of the 250th anniversary of the founding of Baltimore, this month. In their letter they say: "In this invitation it is desired to testify, not only the respect that is entertained for your personal worth and deservedly high character, but the deep sense of obligation for the service you rendered when, in the summer of 1830, you demonstrated, on the Baltimore & Ohio Railroad, 'that its high curvatures, to use the words of the Chief Engineer, would not prevent the successful application of the locomotive engine,' and although with our present lights we wonder that such a demonstration was then deemed necessary, you are none the less entitled to the credit of being the pioneer in the application of steam to American railways. Should you accept this invitation, the President's car, 'Maryland,' of the Baltimore & Ohio Railroad, will be placed at your service at Jersey City, and arrangements made for your reception on your arrival in Baltimore." On his arrival Mr. Cooper was to be received with special honors, and made the guest of the city and the Baltimore & Ohio Railroad Company, but his health compelled him to decline the invitation.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Nine months ending Sept. 30:

	1880.	Inc. or Dec.	P. c.
C. & St. P., Minn. & O.	\$1,070,554	\$835,109	1. 244.445
Hannibal & St. Jo.	1,782,819	1,311,212	1. 471.007
Mobile & Ohio.	1,450,804	1,234,470	1. 225.334
Northern Pacific.	1,080,380	1,383,386	1. 303.003
St. L., Iron Mt. & So.	4,278,410	3,255,633	1. 1,022.757
St. Louis & San Fran.	1,876,000	1,027,000	1. 849.000
St. Paul & Sioux City.	961,177	785,930	1. 165.241

Eight months ending Aug. 31:

	1880.	Inc. or Dec.	P. c.
Del. & Hudson lines.	\$1,285,113	\$2,085,304	1. 509.809
Net earnings.	1,371,204	1,143,948	1. 227.346
Eastern.	1,015,440	1,028,420	1. 287.014

Month of July:

	1880.	Inc. or Dec.	P. c.
Grand Trunk.	\$178,319	\$133,880	1. 444.433
Net earnings.	55,916	23,730	1. 32.180
St. John & Maine.	\$14,208	\$11,885	1. 22.324

Month of August:

	1880.	Inc. or Dec.	P. c.
Albany & Susquehanna.	\$128,246	\$92,551	1. 335.705
Boston & N. Y. Air Line.	28,689	10,727	1. 37.388

Month of September:

	1880.	Inc. or Dec.	P. c.
Chl., St. P., Minn. & Omaha.	\$144,771	\$117,810	1. 226.931
Denver & Rio Grande.	400,990	112,823	1. 288.167

Third week in September:

	1880.	Inc. or Dec.	P. c.
Min. & St. Louis.	\$19,502	\$10,480	1. 53.722
Wabash, St. L. & P.	\$15,906	\$23,975	1. 85.021

Week ending Sept. 17:

	1880.	Inc. or Dec.	P. c.
Great Western.	\$114,200	\$94,829	1. 83.829
Week ending Sept. 25:			
Grand Trunk.	\$217,780	\$200,069	1. 91.711

Grain Movement.

For the week ending Sept. 25, receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past eight years:

Year.	Northwestern Receipts.	Total.	By rail.	By water.	Atlantic Receipts.
1873.	3,844,748	3,458,829	1,094,079	31.6	3,847,979
1874.	4,950,040	2,820,543	370,089	13.1	3,600,931
1875.	5,017,745	3,317,358	1,235,921	37.3	3,000,941
1876.	6,217,470	4,225,204	1,797,847	42.5	3,192,147
1877.	7,338,814	5,090,778	1,110,090	29.1	5,792,479
1878.	5,317,775	4,484,885	1,306,068	29.0	5,660,964
1879.	6,920,270	5,063,693	1,443,261	28.5	7,181,591
1880.	8,329,942	6,098,442	1,952,753	32.0	6,274,974

This year the Northwestern receipts were 20.4 per cent. greater, the Northwestern shipments 20.4 greater, and the Atlantic receipts 12.6 less than in the corresponding week of last year.

Compared with previous weeks of this year, the receipts of the Northwestern markets are 16 per cent. larger than the

week before, and the largest for four weeks, and with one exception the largest for eight weeks. They have, indeed, been exceeded but four times this year, but once in the whole year 1879, three times in 1878, and never in any earlier year. Spring wheat receipts at Chicago and Milwaukee have something to do with the recent increase, but receipts of oats and barley, which usually are not important, still more. In these two latter grains the increase is 367,000 bushels over the week ending Sept. 25, and 939,000 over the previous week.

The shipments of these markets are 23.7 per cent more than in the previous week, and 18 per cent more than the week before, but smaller than in any of the five weeks ending Sept. 4. The rail shipments, however, were nearly equal to the average since June, which has been larger than in any previous year.

The receipts of the Atlantic ports are one-sixth larger than the week before, but with that exception they are the smallest since the third week in May.

Of the Northwestern shipments, Chicago had 53.8 per cent. Toledo, 12.4, St. Louis, 10.6, Peoria 8.5, Milwaukee 6.7, Detroit 3, and Cleveland 1.8 per cent. Milwaukee and Duluth continue to increase.

Of the Atlantic receipts New York had 62 per cent., Baltimore 11.5, Montreal 11.2, Philadelphia 6.7, Boston 5.4, New Orleans 3.1, and Portland 0.1 per cent. New York's proportion has been larger but once this year, and its receipts have been larger in amount but once since July; Boston's are the smallest for nine weeks, Montreal's the largest for four weeks, Philadelphia's the smallest since the first week in February, Baltimore's a little larger than the previous week, but only about one-half its average receipts for three months before that; the New Orleans receipts, which fluctuate greatly, are about one-third of those of the previous week.

The exports of Atlantic ports for four consecutive weeks have been:

	Sept. 20.	Sept. 22.	Sept. 15.	Sept. 8.
Flour, bbls.	109,969	97,970	77,582	84,113
Grain, bush.	4,773,356	5,114,380	5,348,537	6,234,512

Here we see a gradual decrease in the grain exports. For the week ending Sept. 29 receipts and shipments at Chicago and Milwaukee were:

	1880.	1879.	1880.	1879.
Chicago.	4,943,611	3,803,789	3,965,677	2,741,548
Milwaukee.	696,877	1,056,400	290,230	461,890

At Chicago there is an increase of 30 per cent. in the receipts and 44½ per cent. in the shipments; at Milwaukee a decrease of 87 per cent. in receipts and 37 per cent. also in shipments. The Milwaukee traffic, however, is very much larger than it has been heretofore this year, during which the average weekly receipts have been but 279,370 bushels, and the average shipments 303,578 bushels.

The receipts and shipments at Buffalo for the same week ending Sept. 29 were:

	1880.	1879.	1880.	1879.
By water.	2,172,555	3,969,880	1,947,595	2,593,150
By rail.	517,800	715,820	1,000,350	1,298,565

Total... 2,690,355 4,685,700 2,947,945 3,891,715

There is thus a decrease of 42½ per cent. in receipts and 24 per cent. in shipments. Rail receipts were 19.3 per cent. of the whole this year against 15.3 per cent. last year, and rail shipments were 33.9 per cent. of the whole this year against 33.4 last year. The light lake movement was reflected by low lake rates, but canal rates, though much lower than last year, were as high as they had been for several weeks, which, in view of the larger number of boats and the lighter shipments, is somewhat remarkable.

The receipts of grain at tide-water from the Erie and Champlain canals for three years from the opening until Sept. 21 have been:

	1878.	1879.	1880.
Date of opening.	April 15	May 8	April 20
Days open.	190	137	155
Total receipts.	36,115,200	28,781,100	47,034,200
Average daily receipts.	222,720	210,080	303,447

Thus the average daily receipts have been 44.4 per cent more this year than last, and 34.5 per cent. more than in 1878.

The Buffalo Commercial Advertiser reports grain receipts at that port up to Sept. 30 as follows, flour in barrels and grain in bushels:

	1880.	1879.	1880.	1879.
By lake.	877,878	588,690	78,722,617	48,654,358
By rail.	692,900	921,700	25,582,200	32,531,800

Total... 1,570,778 1,510,390 104,304,817 81,186,158

Flour receipts show a total increase of 3.8 per cent., and grain a total increase of 28.5 per cent. Shipments eastward of grain received by lake were, in bushels:

	1880.	1879.	Increase.	P. c.
By canal.	53,634,700	36,192,635	17,442,074	48.2
By rail.	21,482,331	10,714,830	10,767,501	100.5

Total... 75,117,040 46,907,465 28,209,575 60.1

The canal opened April 20 this year and May 8 last year. Baltimore grain receipts in September were as follows, flour in barrels and grain in bushels:

	1880.	1879.	Decrease.	P. c.
Flour.	113,924	146,658	32,734	29.2
Wheat.	3,021,730	5,787,763	2,766,024	47.8
Corn.	390,402	839,007	448,605	52.8
Other grain.	176,551	185,091	8,540	4.8

Total grain... 3,594,602 6,815,431 3,220,739 47.3

Total flour reduced to wheat... 4,164,312 7,548,721 3,384,409 44.8

For the nine months ending Sept. 30 receipts were as follows, flour in barrels and grain in bushels, flour reduced to wheat in the totals:

	1880.	1879.	Decrease.	P. c.
Flour.	853,486	951,562	98,076	10.3
Grain.	41,800,105	45,442,135	3,636,030	8.0

Total, bushels... 46,073,535 50,199,945 4,126,410 8.2

Exports in September were 36,206 barrels and 4,025 sacks of flour, and 8,273,311 bushels of grain.

Coal Movement.

Coal tonnages for the week ending Sept. 25 are as follows:

	1880.	1879.	Increase.	P. c.
Anthracite.	639,171	488,458	150,713	30.9
Semi-bituminous.	98,956	...	...	...
Bituminous, Penna.	40,479	...	...	...
Coke, Pennsylvania.	38,474	...	...	...

The anthracite companies have definitely agreed upon a suspension for one week in October. The market is reported as uneven. At tidewater there is an oversupply of some kinds of coal, while others are in demand with only a short stock ready for delivery.

The shipments from the Sewanee mines of the Tennessee Coal & Railroad Company in September were:

	Car-loads.	Bushels.
Coal.	730	222,369
Coke.	541	303,680
Total.	1,271	526,049

The increase over September, 1879, was 32 per cent.

Lake Superior Iron Ore.

Shipments of iron ore from the Lake Superior Region up to Sept. 29 are reported by the Marquette Mining Journal as follows, in tons:

	1880.	1879.	Increase.	P. c.
From L'Anse.	40,800	32,201	8,599	26.7
From Marquette.	530,614	412,260	118,354	28.7
From Escanaba.	911,593	498,376	413,217	82.9

Total... 1,483,007 942,837 540,170 57.3

Of the Escanaba shipments 455,177 tons were from the Marquette District, and 456,416 tons from the Menominee mines. There are reported this year 32,112 tons of ore delivered to local points, making a total of 1,515,119 tons. Pig iron shipments from Marquette this year were 6,352 tons.

Erie Canal.

The business of the Erie Canal at Buffalo from the opening up to Sept. 30 was as follows:

	1880.	1879.	Increase.	P. c.
Number of boats cleared.	7,992	6,540	1,422	21.8
Receipts of tolls.	\$554,207	\$400,825	\$153,382	38.3
Average receipts per day.	3,400	2,764	636	23.0

The canal was opened for navigation April 20 this year and May 8 last year.

The Chicago, Burlington & Quincy and the St. Louis Pool.

The following is the decision of the Board of Arbitration in reference to the application of the Chicago, Burlington & Quincy for a share of the St. Louis business:

"Referring to the letter of submission to the Chairman of the Joint Executive Committee of Aug. 26 last, we herewith forward you our decision on the claim of the Chicago, Burlington & Quincy Railroad Company of May 1, 1880, for an allotment of east and west bound business to and from St. Louis. In this case, the Chicago, Burlington & Quincy being a member of the General Railroad Association, represented by the Joint Executive Committee, and having access over its own tracks to St. Louis, but not being a member of the existing St. Louis pool, applies to be recognized as a member of that pool and to have a fixed percentage of the entire St. Louis traffic allotted to it. The St. Louis terminal roads comprising the present pool at that place object to the proposed recognition of the Chicago, Burlington & Quincy Railroad as a member of the same, and the consequent allotment to it of a percentage. The question, therefore, first to be decided is whether, under the existing agreements, the Board of Arbitration has any power either to add to or diminish the number of those composing the local pools at given points. The whole pooling system as it now exists is based on the principles of voluntary association. The Joint Executive Committee can neither compel a road to pool its business, nor can it force the roads composing any pool to admit other roads into it. In either case this must be done by mutual consent. The uniform practice hitherto has been for the roads, or a portion of them, at given points to agree to pool their business, and the questions that have been decided by the Board of Arbitration are those arising among the roads thus associated, after agreement to form a pool has been made. The position of a road belonging to the Association, and represented in the Joint Executive Committee, but not admitted in the local pool at any pooled point at which it controls traffic facilities, is not affected by the fact that some or all the other roads are thus pooling their local business. It is in no way thereby excluded from a share in the traffic of that point; it is entirely free at the established rates to do all the business it can command, and may exert itself to do business in any legitimate way, subject to the rules of the Association.

"These conclusions are in harmony with the decision made by Mr. Fink in his ruling on a similar question which came before the Joint Executive Committee in connection with the division of traffic from Detroit and Ontario, at the meeting of the Committee, March 25, 1880, and it seems to be the only ground which could be taken consistent with the spirit and usage of the Association as it now exists. In the present case, therefore, the objection of the members of the existing pool at St. Louis to the admission of the Chicago, Burlington & Quincy to that pool is final, and not until that company, by mutual consent, becomes a member of the pool can a fixed percentage of the traffic in question be allotted to it.

THE SCRAP HEAP.

Boston Suburban Travel.

The Boston Journal has gathered some interesting facts in regard to the season-ticket business of the several railroads having a terminus in that city. The population of 37 cities and towns, whence come daily 7,950 season-ticket passengers to Boston, is 255,000. This shows an average of one "Bostonian" in every 32 of the suburban population. But the families supported by these persons would probably increase the ratio of those who get their living directly from the city to one in eight. This estimate, however, does not include Cambridge, Somerville, Chelsea, Brookline, Milton, and other places, where there is a large horse-car travel, and where the proportion of persons depending upon Boston banks counting rooms and stores for a living would be still greater. The aggregate population of the 14 cities and towns, exclusive of the horse-car points, within the 12 miles radius, is 118,000, and the number of polls 23,730. The number of season-ticket passengers to Boston from these places is fully 6,000. From towns on the northern railroads there is a large daily influx. By the Fitchburg 600 come in on season tickets, including 126 from Cambridge. The regular travel from points on the Eastern road includes 600 patrons of the workingmen's train on the Saugus Branch between Boston and Lynn. There are 350 season passengers from Salem, and 200 monthly tickets from Lynn, in addition to patrons of workingmen's trains and quarterly tickets. On the Lowell road, within 20 miles, there are about 1,600 season ticket holders. This number includes 357 at stations in Somerville, 237 in Arlington, 164 in Lexington, 268 in Medford, 200 in Winchester, and 205 in Woburn. On the Boston & Maine road there are 1,600 season-ticket passengers. Three-fourths of the number come from Reading and way stations, including about 300 each from Malden, Melrose and Medford. On the Boston & Providence road is the town made up of the largest proportion of Boston business men of any in the suburbs. This is Hyde Park. From stations in the town on the New York & New England and Boston & Providence roads, there are over 600 season-ticket passengers to Boston. This equals a majority of the legal voters of the town. From Dedham there come 200 passengers. The New York & New England brings a large number from its six stations in Dorchester. From Norwood and Walpole there are

about 100 passengers. The low rate for package tickets on the Old Colony road has reduced the season-ticket travel. There is a heavy traffic from stations within the city limits. Beyond this end within 25 miles there are 258 seasons in Quincy, 103 in Weymouth, 123 in Braintree, and 112 in Brockton. The Boston & Albany Railroad brings in more than 1,000 season-ticket passengers daily. These are divided as follows: Brookline, 95; the Newtons, 842; Natick, 73; South Framingham, 31. The package-ticket business upon the railroads has become immense. On the Boston & Providence about 80,000 per month are used by persons living within 10 miles of Boston, and on the Boston & Maine the daily average is 5,000.

Getting a Drink on the Train.

The Baltimore & Potomac Railroad cars are fitted with the automatic air brake, and the lever in each car is located in the closet directly behind the water faucet. On a train bound to Washington, a few days ago, a rather intelligent looking farmer said to the conductor, Captain O'Neal, that he would like a drink of water. The accommodating Captain, pointing to the faucet, remarked: "There it is, sir. Just press on the faucet," and walked into another car, while the old man disappeared into the closet. All of a sudden the train slowed up, as Captain O'Neal, returning, met the old man coming out, exclaiming: "Why, Captain, I can't get water here; there is no place for it to come out of." O'Neal asked, "Where did you press?" and the farmer innocently pointed to the brake. With some difficulty he kept from laughing in the old man's face, and, hastily explaining to him that he had come near stopping the train, and showing the old man how to get water, he went into the baggage car to finish his laugh.—*Dail. more Sun.*

The Largest Lake Schooner.

There is now on the stocks at Toledo a schooner which will be, it is said, the largest sailing vessel on the lakes. Its dimensions are: Length of keel, 265 ft.; length over all, 278 ft.; beam, 38 ft.; depth of hold, 18 ft. It will have capacity for 90,000 bushels of grain with 14 ft. draft; and with water enough could carry 110,000 bushels. It will register about 1,600 tons, draw 6 ft. light, and cost, fitted up, about \$90,000. It is to be launched before navigation opens next spring.

OLD AND NEW ROADS.

Atlanta & Rome.—Major Samuel, of Atlanta, has given formal notice that he will make application to the Georgia Legislature at its next session for a charter to build a railroad from Atlanta to Rome. The object is understood to be to furnish an independent connection between Atlanta and the East Tennessee, Virginia & Georgia system.

Atlantic, Mississippi & Ohio.—A number of the stockholders met in Richmond, Va., Oct. 6, and discussed the question of taking measures to prevent or postpone the foreclosure sale. No action was taken, on account of the absence of the representatives of the cities of Norfolk, Petersburg and Lynchburg, which are large stock-holders.

Atlantic & Pacific.—A correspondent writes from Albuquerque, N. M., Sept. 26: "The track is now laid from the junction, with the New Mexico & Southern Pacific, Isleta (a small Indian village), 10½ miles west of here, to the 25-mile post; the graders are 30 miles in advance of the track. It is expected to lay at the rate of a mile a day for the next 60 days. There has been quite a delay on account of the wash-outs east of here; bridge material and ties could not be forwarded, but as it is now thought the rainy season is over there will not be much difficulty in pushing the work."

Bell's Gap.—Grading on the extension from Lloydsville, Pa., to Coalport, in Clearfield County, is now well advanced, and the tracklayers are at work between Lloydsville and Glasgow.

Boston & Albany.—The Boston Traveller thus describes the new passenger station of this road in Boston: "The building will have a frontage on Kneeland street of 118½ ft., will be three stories high and will have a large head and train-house. On the front or Kneeland street end of the building will be a fourth street. The walls will be of brick, with trimmings of granite, which will give the exterior a handsome as well as substantial appearance. On the ground or first floor, entered by two large archways (with four entrances each) from Kneeland street, will be the central court or main depot room, 49 ft. wide, and extending the entire length of the head-house. The floor will be of colored marble, and above, at a height of 40 ft., are large skylights, which will furnish ample light to the room and the corridors leading to the upper stories. A portion of this room will be finished off to the same height as the first floor, while the balance will be finished up to the line of the third story floor.

"Between the two arches referred to above, and handsomely fitted up, will be the telegraph office, while leading off from the right to the large rotunda just beyond the main entrance will be the ladies' reception room, 74 by 34 ft. in dimensions. Lavatories, a retiring room, an extensive parcel room, as well as entrances to the train-house and to Lincoln street, will be the adjuncts of this apartment. A window of the ticket office, which extends well out into the central court, will also be one of the conveniences, affording an opportunity to ladies to secure their tickets without being jostled or experiencing the annoyances attendant upon purchasing a ticket from outside.

"The gentlemen's room will be directly opposite, and a door just north of it will open into the corridor leading to the upper stories. The gentlemen's room will be considerably smaller than that for the ladies, but still well fitted and provided with every requisite. In connection with it will be a restaurant which will front and open prominently on the central court, and out of it will be three large entrances to the train-house. Ample provisions will also be made for a news stand. The grand staircase to the upper stories and offices will lead up from the northern end of the central hall, while at the other end will be a private one for the use of the officers of the company and their assistants. The rooms on the first floor as well as the offices will be heated by steam, and in nearly all of the apartments there will also be open fireplaces, both to furnish extra heat and to assist in ventilation.

"The second will be arranged very similar to that in the Lowell station. A broad corridor will lead around the interior and command a full view of the central court below. On the Kneeland street end will be located the rooms for the President and directors, together with the Treasurer's and Superintendent's offices. The President's room, through a private ante-room and a large drawing-room, will communicate with the Superintendent's room, and there will also be connection with the company's telegraph office on this same floor. The several rooms for the Paymaster, Cashier and season ticket agent will be on the Utica street side, while the General Freight Agent will have quarters on the other side, and there will be several commodious apartments for the other departments.

"On the floor above, or the third story, will be rooms for corporation meetings, a large library and various apartments to be used in connection with the several departments. This floor forms the ceiling for the central court

below, and its rib wood-work, together with all the wood-work of the central court, including the piers, columns, balcony and carved work, will be entirely of butternut, presenting an elegant finish. This same wood will also be used in finishing the offices, and throughout the entire structure the finish will be of natural wood colors.

"The length of the train-house is as yet undecided upon, but, as the company are not limited in this respect, it will be sufficiently long to do away with the present inconvenient system of making up trains in sections. Its track arrangement will be ample, and all that could be desired for public convenience. There will be four lines, the outward on the west side, and the inward on the east, and between each track, as well as at the end of the area at the head of the train-house, will be high fences, and the system of dispatching trains will in every respect be a decided improvement over the confusing method now in vogue at the Beach street station.

"There will be a special track for the New York and other express trains, as well also one for the local accommodation trains, while the heavy emigrant business done by this road daily will be well provided for by a track on the outside of the depot, whence the trains for this class of passengers will depart.

"By tearing out a passageway 80 ft. in width in the building between the new station and the Old Colony depot, and roofing it over, a hack stand convenient and ample will be provided, and Utica street, already very narrow, will thus be rid of this obstruction and nuisance.

"At present the work on the building is being pushed vigorously, and it is expected that it will be entirely completed by next summer. Messrs. Flint & Co., of Munson, are the contractors for the stone work; Norton & Chesley, of Boston, do the carpentry, and Messrs. Rumery & Maxwell the masonry. Alexander R. Esty is the architect and supervises the whole work."

Boston, Hoosac Tunnel & Western.—The contract for the extension of this road from Mechanicsville, N. Y., to Schenectady, has been let to Bridges & Snyder, of Philadelphia. The distance is 17 miles, but only 13 miles of new road are to be built, as four miles of the Delaware & Hudson Canal Company's track will be used. By the line now in use between Schenectady and Mechanicsville the distance is 23 miles.

The Governor and Council of Massachusetts have approved a contract to operate the Boston, Hoosac Tunnel & Western Railroad from the Hoosac Tunnel to the Vermont state line, the terms being similar to those in the contract between the commonwealth and the Fitchburg Railroad Company.

Burlington & Missouri River in Nebraska.—The Eastern Division of the Republican Valley line is now completed and opened for business to Harbin, Neb., 13 miles east of the late terminus at Hardy, and 41 miles from Red Cloud. Regular trains are running to the new terminus.

Central, of Georgia.—Charges having been made that this company was taking an active part in the political contest in Georgia, President Wadley has published a letter denying the assertions made. He says that the company has studiously kept out of politics, and that its officers are forbidden to exercise any influence over the votes of its employees.

Chicago & Alton.—It is reported from Peoria that this company is making surveys for an extension of its Washington Branch from Washington, Ill., to Peoria, thus securing a line of its own to that important point. The distance is only about 12 miles, and the distance from Chicago to Peoria by this route would be 156 miles. The company has done some Peoria business over the Chicago, Pekin & Southwestern road.

Chicago, Burlington & Quincy.—In Council Bluffs, Ia., Sept. 30, the United States Circuit Court granted an injunction to restrain this company's proposed Southern Iowa & Nebraska line from crossing unnecessarily the line of the Missouri, Iowa & Nebraska road, which was first located.

Officers of this company have recently been over the Lake Erie & Western road, which has renewed the reports of a traffic agreement with that company and the probable use of its road as an eastern outlet for the Burlington lines.

Chicago & Iowa.—There is a report that the two parties of stockholders known as the Aurora and the Hincley parties, who have been contending for the possession of this road, have both sold out to the Chicago, Burlington & Quincy, and that the suits in the case will soon be settled. The Aurora party is the city of Aurora, which owns \$100,000 of the stock, for which it paid its bonds, now all paid off. This stock cannot be sold without authority voted at a town meeting, which so far has never been given.

Chicago, Milwaukee & St. Paul.—It is reported that this company is making surveys for an extension of its Southwestern Division from Marion or Cedar Rapids to Council Bluffs.

Chicago & Northwestern.—This company is said to be prospecting for a line to run from a point on its Toledo & Northwestern Branch westward to the Missouri on a line parallel to and about half way between the Illinois Central and the Chicago, Milwaukee & St. Paul's Iowa & Dakota Division.

Chicago, Pekin & Southwestern.—Receiver Reed reports to the Court for August as follows:

Balance, Aug. 1.....	\$8,996.67
Receipts from all sources.....	37,581.05
Total.....	\$46,577.72
Disbursements.....	27,896.33

Balance, Sept. 1.....	\$18,741.39
The receipts exceeded the disbursements by 9,744.72.	
Payments include \$5,585 for new freight cars and \$5,000 to Western Car Company on account.	

Chicago, Rock Island & Pacific.—This company opened for business on Oct. 4 a section of the Avoca, Macedonia & Southwestern Branch, extending from the main line at Avoca, Ia., 41 miles east of Council Bluffs, southward to Carson, 17½ miles. About five miles more will take the branch to Macedonia.

The Keosauqua Branch was opened for business Sept. 29. It extends from Mt. Zion, Ia., on the Keokuk & Des Moines Division, 46 miles from Keokuk, southwest to the town of Keosauqua, a distance of 4½ miles. Part of it is on the line of the narrow-gauge road, built several years ago and afterwards abandoned.

Chicago & Western Indiana.—A Chicago dispatch of Oct. 5 says: "Another point was gained to-day by the Western Indiana in its fight with the Lake Shore & Michigan Southern Railroad to secure access to the centre of the city. The officers of the former company were sought to be held for contempt of the injunction granted on March 20, forbidding them from laying a track across certain lands south of Sixteenth and west of Clark street. It became necessary for the Western Indiana Railroad to cross this track to complete its line into the city, so after the injunction was grant-

ed it purchased an undivided interest in the land, the Michigan Southern owning the remainder, and laid its track immediately, under the protection of another injunction. The case was argued in the Circuit Court at Chicago, Monday, and to-day (Oct. 5) Judge Tuley discharged the respondents in the writ for contempt, holding that they were tenants in common with the Michigan Southern in the tract in question, and as such had a right to lay tracks."

Cincinnati, Sandusky & Cleveland.—It is reported that negotiations are in progress for the sale or lease of this road to the Cleveland, Columbus, Cincinnati & Indianapolis Company. The officers of that company recently made a careful inspection of the road. It is said that the officers of the Cincinnati, Sandusky & Cleveland have based their offer on a valuation of about \$6,000,000, or about \$32,000 per mile, which is considered too high by the other company.

Cincinnati Southern.—A dispatch from Cincinnati, Oct. 2, says: "Hon. Alexander Ferguson, a member of the board of trustees of the Cincinnati Southern Railroad, and Attorney for the trustees, this afternoon submitted a form for the new lease of the road. It contemplates a term of 25 years. The rents are to be paid quarterly, and consist of a percentage of the gross earnings. The lessees are to keep the road in repair, keep it well stocked, and are to stand good for all damages that may arise out of the management or operation of the road. In case of destruction of certain bridges by tornado or flood, the Trustees are to restore them. If, at the expiration of 25 years, the lessees should not become their own successors, it is provided that their rolling and operating stock shall be appraised in a specified manner and taken at such appraisement by whoever succeeds them. The matter is now before the Trustees for their action, and if approved bids will be invited."

Connotton Northern.—The offer of this company to build its road from Canton, O., to Fairport, provided the people on the line would give the right of way has only been partially met, and it is uncertain whether the company will take any further steps.

Costa Rica.—Advices from Panama, Sept. 25, say: "The government of Costa Rica has entered into a contract with J. Mosen-Chiarin for the construction of an elevated railroad from San Jose, the capital, to Rio Sucio, there to connect with the railroad in course of construction from Limon. The work is to be begun within six months from the date of the contract, Aug. 9, and be completed and ready for traffic within ten months from the same date."

Denver, Salt Lake & Western.—This company has filed articles of incorporation in Colorado. We are not advised of the proposed line. The capital is to be \$500,000.

Denver, South Park & Pacific.—At a meeting of the stockholders, held Sept. 20, the following resolutions were adopted:

"Resolved, That the original articles of association of the Denver South Park & Pacific Railroad Company be so amended as to give power to this company to construct, operate and maintain extensions and branches of said railroad and telegraph lines as follows, viz.: Broad or narrow gauge lines of road from any eligible point or points on the line or lines of branches of said railroad, or from Denver to Colorado Springs, Pueblo, Canyon City, Silver Cliff, and Rosita, in the several counties of Arapahoe, Jefferson, Douglas, Park, El Paso, Fremont and Custer, and to connect the lines of said railroad and branches at any point or points by a branch or branches with the main line, or other branches of said railroad of said company; also a branch of said road from a point on the Tomichi River, up, along and near the Cochetopa Creek by the most eligible route, in the counties of Gunnison and Saguache, to the town of Saguache. Also a branch from the line of said road on Ohio Creek by the most eligible route to Crested Butte, in Gunnison County; also to extend the Dudley Branch of said railroad (provided for in said original articles of association) by way of Hoosier Pass to the town of Breckenridge, through the counties of Park and Summit, all in the state of Colorado.

"Resolved, That for increasing the means of the company to go forward with the construction of its lines, extensions and branches, its capital stock be increased from \$5,000,000 to \$20,000,000, said increase to be at the rate of \$20,000 per mile for extensions and branches."

Detroit, Butler & St. Louis.—Detroit papers report the grading all done on this road from the Grand Trunk Junction near Detroit for several miles beyond the Flint & Pere Marquette crossing at Romulus. Track is laid from Romulus towards Detroit 11 miles, with work still in progress.

East Alabama & Cincinnati.—The purchasers of this road at foreclosure sale have organized the East Alabama Railway Company, which is now operating the road. The line extends from Opelika, Ala., to Buffalo, 22 miles; there is also a detached section of five miles from Gadsden, Ala., to Attalla, on the Alabama Great Southern road.

European & North American.—In September the time allowed for the redemption of the property by this company expired, and the road passed to the bondholders on that date by a strict foreclosure, under decree of court. The bondholders were to meet in Bangor, Me., this week, for the purpose of forming a new corporation. The foreclosure includes the land-grant and consolidated bonds, but leaves as liens on the road the \$1,000,000 Bangor city loan and \$98,800 bonds of the old Penobscot Company still outstanding. The property transferred consists of the 114 miles of road from Bangor to Vanceboro, with the equipment.

Flint & Pere Marquette.—The following circular is dated Oct. 1:

"The foreclosure proceedings begun in June, 1879, by the holders of the consolidated bonds of the Flint & Pere Marquette Railway Company, under which the property was placed in the hands of a receiver on the 1st of July, 1879, resulted in a sale of the property on the 18th of August, 1880, which was confirmed by the court on the 21st of September, 1880.

"The purchasers have organized a new company under the name of the Flint & Pere Marquette Railroad Company.

"The new company will take possession of and operate the road on and after Oct. 1. * * *

"All agents and employees in the employ of the Receiver will be continued until otherwise advised.

"The accounts of the Receiver will be closed on the evening of Sept. 30, 1880, and reports and remittances will be made thereafter to the proper officers at East Saginaw, Mich., for account of the new organization."

Galveston, Harrisburg & San Antonio.—On the new La Grange Branch track has been laid from Columbus, Tex., west by North to Ellinger, 18 miles, where a new town is being laid out. Work is progressing steadily toward La Grange.

Grafton County Lumber Co.—This company purposes building a railroad from the Portland & Ogdensburg at Livermore, N. H., into the forest about five miles.

Henderson & Overton.—Texas papers state that this road has been sold to the International & Great Northern

Company for \$68,000. The road is 16 miles long, from Overton, Tex., on the International & Great Northern, to Henderson. It is said that it will be extended from Henderson east by south about 35 miles, to Buena Vista in Shelby County.

Hudson Tunnel Railroad.—Work at the tunnel with the new caisson proceeds slowly, and little progress has been made towards clearing out the tunnel.

Much testimony has been taken before the coroner's jury over the bodies recovered from the tunnel, but most of it has been rather in the nature of expressions of opinion, and no new facts of any importance have been brought out.

Indianapolis & Evansville.—Track laying has been begun on this road between Washington, Ind., and Evansville.

A suit has been begun to prevent this company from building along the line of the old Evansville, Indianapolis & Cleveland Straight Line Railroad. The complainant is Francis C. Fellows, who claims to own all the rights and franchises of the Straight Line, by virtue of purchase under decree of foreclosure of mortgage, issued by the United States Court. He further claims that the Indianapolis & Evansville Company, which is proposing to utilize the line surveyed for the old road, acquired nothing by its condemnation, because of the unconstitutionality of the law under which it operated—the law providing for the condemnation of property belonging to derelict corporations. The Court has heard arguments, but reserved its decision.

Kankakee & Southwestern.—This company has been formed by the consolidation of the Kankakee & Western, the Kankakee & Southwestern and the Clinton, Bloomington & Northeastern. The three organizations were all controlled by the Illinois Central, and the consolidated company owns the line from near Kankakee, Ill., to Minonk and its branches, which are worked by the Illinois Central as its Middle Division.

Kansas City, Lawrence & Southern.—This company announces that its Southern Kansas line is now completed and regular trains are running to Harper, Kan., 40 miles west from the late terminus at Wellington, 144 miles from Independence, and 306 miles from Kansas City.

Knoxville & Charleston.—This company has changed its name and will hereafter be known as the Knoxville & Augusta. It is now in operation from Knoxville, Tenn., to Maryville, 16 miles. It is to be extended to the North Carolina line to meet the Augusta & Knoxville road, now under construction from Augusta, Ga.

Laclede & Creve Cœur Lake.—This company has filed articles of incorporation to build a railroad from Laclede, in St. Louis County, Mo., to Crève Cœur Lake, with a branch to run around the lake. It is intended for suburban and pleasure travel. The capital stock is to be \$230,000; the incorporators are Edward A. Shedd, Charles B. Shedd and John S. Field, of Chicago; Horace A. Stephens, Francis E. Stephens, and Augustus B. Corey, of St. Louis.

Lexington & Big Sandy, Eastern Division.—The name of this road has been changed to the Ashland Coal & Iron Railway. It extends from Ashland, Ky., to Rush, 14 miles.

Little Elk Creek.—Surveys and estimates have been completed for this road, which is to run from Elkton, Md., on the Philadelphia, Wilmington & Baltimore Railroad, up the valley of the Little Elk to Providence Mills, seven miles distant. In this length it rises 190 ft. above the level of the track at Elkton. The estimate of a first-class road in every respect, using the lightest grades and easiest curves that the case will admit, is \$194,000. The last four miles are through a rough country, and rock excavation on the sixth mile is estimated at over \$18,000.

Louisville & Nashville.—At the annual meeting, Oct. 6, the stockholders voted in favor of a proposal to double the amount of the stock by a stock dividend of 100 per cent. It was stated that the company's surplus for the year was about 17 per cent. on the old stock.

Massachusetts Central.—The Boston Traveller of Oct. 4 says: "Work on the Massachusetts Central Railroad, at all points along the line, is being prosecuted most vigorously. The heavy cuts at Berlin and Rutland, the most difficult to be opened on the whole road, have been about completed—the former wholly and the latter nearly so. The contract for the construction of the road from Old Furnace (Hardwick) to Amherst has just been let, and the work on this part will be pushed rapidly. At Amherst men are at work on the Cottage Hill cut, grading is being done at Northampton, and stone is being taken out for finishing the piers and the bridge over the Connecticut River. At Belchertown, also, the work of building the abutments for the bridge over the tracks of the New London & Northern Railroad is well under way, and arrangements have been made for grading between Northampton and Coldbrook within a few weeks. The work at this end, between this city and Hudson especially, is fast approaching completion and the rails are being laid in several sections. In fact, there is bustle and activity, even more than ever heretofore—from one end of the road to the other—and the managers positively assert now that they will have trains running regularly over the entire route within six months from the present time."

Manhattan Elevated.—At the recent meeting of the New York Elevated Company a statement of the number of passengers carried on all the elevated lines for twelve months, ending Sept. 18, 1880, was submitted. It shows the following result:

Third Avenue.....	29,601,186
Ninth Avenue.....	5,237,541
Second Avenue.....	4,403,688
Sixth Avenue.....	21,143,658
Total passengers.....	60,386,073

Allowing for transfer at Chatham square from the Second to the Third Avenue line of passengers carried on the Third Avenue line north of the square, by deducting from the Second and adding to the Third Avenue 1,597,500 passengers, the result of the twelve months' business shows:

On New York Elevated Company's line:	
Third Avenue, passengers.....	31,168,686
Ninth Avenue, passengers.....	5,237,541
On Metropolitan Company's lines:	
Second Avenue, passengers.....	2,876,188
Sixth Avenue, passengers.....	21,143,658
	23,979,846

Showing 12,436,481 more passengers on the New York than on the Metropolitan lines.

Upon the same basis the New York lines carried for the first month after the opening on Aug. 16, 1880, of the Second Avenue line to the Harlem River, 2,955,416 passengers, against 2,214,908 on the Metropolitan lines, an excess in favor of the New York Company of 740,508 passengers.

The earnings and expenses during the same month were as follows:

	Earnings.	Net.
Third Avenue.....	\$158,223	\$67,223
Ninth Avenue.....	44,426	11,426
New York lines.....	\$202,649	\$78,649
Second Avenue.....	\$54,275	\$16,275
Sixth Avenue.....	126,396	44,396
Metropolitan.....	\$180,671	\$60,671
All lines.....	\$383,320	\$139,320
New York excess.....	\$21,978	\$17,978
Allowing for transfers at Chatham square, the net result is as follows:		
Third Avenue.....	\$77,348	
Ninth Avenue.....	11,426	
New York lines.....	\$88,774	
Second Avenue.....	\$6,150	
Sixth Avenue.....	44,396	
Metropolitan lines.....	\$50,546	
New York excess.....	\$38,228	

The relation of these earnings to the fixed charges for interest on bonds is shown by the following table:

	Net earnings.	Int. on bonds.	Balance.
New York lines.....	\$88,774	\$51,243	\$37,531
Metropolitan lines.....	50,546	54,498	3,932

That is, the New York lines show a surplus equivalent to nearly 7 per cent. a year on the stock, while the Metropolitan showed a deficit.

The New York Elevated Railroad Company has large and very valuable machine-shops, covering the entire land between Third and Fourth avenues, and Ninety-eighth and Ninety-ninth streets, which are used to repair the engines and cars of all the lines; but in the above statement no debit is made to the Metropolitan Company, or credit to the New York Company, for the use of these shops. If this charge was included, it would increase the deficiency on the Metropolitan lines and the surplus on the New York lines.

The New York Evening Post, of Oct. 6, says: "We have to-day been shown by Mr. Cyrus W. Field official letters from the Treasurer of the Manhattan Company, dated Oct. 4, from which we have gleaned the following facts:

"Financial position of the Manhattan Railway Co. on Oct. 1, 1880.

"Amount of accrued interest to date on bonds guaranteed by the Manhattan Railway Co., viz.,

On New York Elevated, first mortgage.....	\$148,750
On Metropolitan.....	162,000
On second mortgage.....	13,200
	\$323,950

Amount due for pay-rolls for September, estimated—all bills not being yet in..... 150,000

Total.....	\$473,950
Cash on hand.....	318,549
Deficiency.....	\$155,401

"And we further learn from Mr. Field that the Manhattan Company had on hand at the beginning of the fiscal year, Oct. 1, 1879, cash from earnings previous to that date, \$582,460.57, which makes a deficiency to earn fixed charges for the fiscal year ending Oct. 1, 1880, \$737,867.56."

Meadville.—Work is progressing well on the grading of this new road from Meadville, Pa., to Linesville. The location by Shermansville, Evansburg, the French Creek Feeder and Wilson's Run has been finally adopted. It is proposed to finish the eight miles from Linesville to Evansburg on Conneaut Lake this fall, in order to secure some business in hauling ice.

Mexican Railroads.—A dispatch from Mexico, Oct. 3, says that President Diaz has signed the contracts with the Mexican Central (the Atchison, Topeka & Santa Fe), and the National Mexican Construction Company (the Palmer-Sullivan party), but the concessions will not become valid until ratified by Congress.

Michigan Air Line.—The extension of this road from Rochester, Mich., to Pontiac, 10 miles is now finished, and will soon be opened for traffic. This makes the road 36 miles long, from Ridgeway to Pontiac. It is controlled by the Grand Trunk.

Milwaukee, Lake Shore & Western.—Work is now well advanced on the extension of this road from Norrie, Wis., to Wausau. The tracklayers are at work, and it is expected that trains will run to Wausau next month. The road has been located from that place to Abbotford on the Wisconsin Central, and work will soon be begun.

Minneapolis & St. Louis.—The grading on the new Taylor's Falls & Lake Superior Branch is now completed with the exception of a few trestles. Track laying has been begun on the extension from present terminus at Centre City, Minn., to Taylor's Falls, about ten miles.

Missouri, Kansas & Texas.—The following statement is published for August and the eight months ending Aug. 21:

	August.	1879.	1880.	1879.
Gross earnings.....	\$350,701	\$306,335	\$2,647,710	\$1,807,809
Working expenses.....	159,836	139,684	1,254,562	1,070,053
Renewals.....	37,510	22,436	234,674	227,611
Improvements, rentals and equipment.....	35,320	10,296	280,276	146,068
Total expenses.....	\$232,666	\$172,416	\$1,769,512	\$1,444,332
Net earnings.....	\$118,035	\$133,919	\$887,198	\$363,477
Percent. all expenses.....	66.3	56.3	66.5	80.0

The gross earnings for the eight months increased 31.9 per cent., and the net earnings 144.1 per cent., in spite of a large increase in expenditures for improvements, and a small increase in renewals.

Missouri Pacific.—The Lexington & Southern Branch is now completed and in operation from a junction with the Kansas & Arizona Division of this road near Harrisonville, Mo., south to Butler, the county seat of Bates County. This branch is 28 miles long and is on a line partly graded several years ago by the Lexington, Lake & Gulf Company.

The consolidation of the branch lines with this company has been ratified by the stockholders of the Kansas City, Leavenworth & Atchison, and the St. Louis, Kansas & Arizona Companies.

A little fight has been in progress with the city of St. Louis over the proposed extension of Jefferson avenue across the tracks of this road by a bridge. The city began to lay foundations for the piers, which the company resisted. Applications for injunctions were made on both sides and are still before the courts. At latest advices a compromise was under consideration. The chief objection to the bridge was that its erection would make it necessary for the company to lower its tracks several feet.

Montreal & Champlain Junction.—Track laying is

in progress between St. Constant, P. Q., and Dundee, and the company expects to have trains running in the spring from Montreal to the province line near Dundee.

Nashville, Chattanooga & St. Louis.—At a meeting held last week the board of directors agreed to modify the existing contract with the Memphis & Charleston Railroad so as to allow it the use of the track for its own engines and trains between Stevenson and Chattanooga at an annual rental of \$60,000 for a period of eight years. The engines of the Nashville, Chattanooga & St. Louis will continue to haul trains off the Memphis & Charleston road to Chattanooga and return, as heretofore, for a year.

New York, Pennsylvania & Ohio.—The Meadville Journal of Oct. 1 says: "On Wednesday, as previously announced, the Franklin Branch (Meadville to Oil City, 33 miles) was to be changed to the standard gauge. Between two and three hundred men were distributed along the track on Tuesday, in gangs of from 10 to 20 each with a superintendent. As soon as light appeared the work began. There was but little detention, all being completed at 9.30, except a section between Shaw's Landing and Cochran. But it was finished in time for the 11.20 train, which went into Oil City but little behind, returning to Meadville on time. The work was under the supervision of Assistant Engineer H. C. Thompson. Considering the difficulties always attending such work, it was accomplished in a very short time and workmanlike manner."

A statement published in London gives the following for the month of July:

	1880.	1879.	Inc. or Dec.	P. c.
Gross earnings.....	\$432,877	\$360,041	I. \$72,836	20.2
Expenses, rentals and all charges.....	360,045	375,799	D. 15,754	4.0
Net surplus.....	\$72,832			
Deficit.....	\$15,758			

The seven months ending July 31 show a net surplus of \$511,858, against a deficit of \$247,394 for the corresponding period in 1879, showing a total gain of \$759,252 thus far this year.

Nicaragua.—The section of the Nicaragua Railroad from the port of Corinto inland to Chinandega is very nearly finished and will soon be opened for traffic. Arrangements have been made for the extension from Chinandega to Granada and Leon.

Northern, of Canada.—Traffic on this road was interrupted last week by a strike of the freight brakemen. After holding out a week, they returned to work Oct. 4, without conditions.

Northern Pacific.—The Casselton Branch is now completed and opened from Casselton, Dak., north to Elm River, 31 miles.

This company's gross earnings for the first three months of the current fiscal year show an increase of \$123,693, or 18.4 per cent. The land sales east of the Missouri River amounted to \$188,000 in September.

Ogdensburg & Lake Champlain.—The time for the exchange of preferred stock for new mortgage and income bonds expired Oct. 1. It is stated that holders of 16,300 out of 20,000 shares have accepted the company's proposition.

Ohio Central.—A call has been issued for a special meeting of the stockholders and registered bondholders to be held in Columbus, O., Oct. 18, for the purpose of authorizing the construction of a branch line known as the Mineral Division, and the increase of the capital stock of the company from \$4,000,000 to \$4,400,000, and the issue of certain securities, secured by mortgage on such branch line, and for other purposes. On the same day and at the same place there will be a meeting of the stockholders of the Ohio Central Coal Company, for the purpose of authorizing the purchase of additional property, and the issue of bonds secured thereon, and the transaction of other business.

Old Colony.—This company has begun work on a second track from Fall River, Mass., to Somerset Junction, about six miles. A large new car-house is to be built at Fall River.

Oregon Pacific.—This company is offering bonds in New York to be secured on a proposed line from Yaquina Bay, Oregon, east to Corvallis, 60 miles, and thence 70 miles beyond. The line is intended to run hereafter to Boise City, Idaho, and thence to a connection with the Central Pacific, with a branch to the Columbia River. The company has absorbed the Willamette Valley & Coast Company, with its short unfinished line, and a land grant in Benton County.

Philadelphia & Reading.—Philadelphia dispatches report that the net receipts of the Reading Railroad and the Reading Coal & Iron Company for September, after charging all rentals, exceed \$1,200,000. Out of this the Receivers have concluded to pay, on Oct. 5, \$100,000 on account of money borrowed. The loan was \$1,000,000, to pay the interest on the consolidated mortgage bonds then falling due and the wages of the railroad employees. A further payment of \$200,000 will, it is said, be made on the same account in a week or so.

Richmond & Allegheny.—The bridge over Jackson's River at Williamson, Va., has been completed. A connection with the Chesapeake & Ohio has been made there, and track-laying has been begun from that point toward Buchanan.

Rutherford & Ridgewood.—This company has filed articles of incorporation in New Jersey. It is a re-incorporation of the Bergen County Company, and is to build the Erie cut-off from Rutherford to Ridgewood, about 10 miles.

St. Joseph Valley.—Work is now well advanced on the grading of this road from Buchanan, Mich., to Berrien Springs. The first lot of rails has been received, and an engine and some cars are expected.

St. Louis & Southeastern.—Concurrent final decrees of sale of the St. Louis Division have been granted by the United States Circuit Courts for Indiana and Illinois. The decrees find that there is due on the bonds of October, 1870, March, 1871, and August, 1872, the sum of \$1,982,637.62, of which \$1,627,637.72 is interest. The holders of the bonds of October, 1872, have received thereon \$50,000 from the sale of property in Kentucky, and \$428,896.99 from the sale of property in Tennessee. In addition to this, there is still due the sum of \$7,461,866.93, including interest to the amount of \$3,048,706.82, making a total indebtedness up to Aug. 1, 1880, of \$12,444,504.65. The time for redemption will expire Oct. 21, and W. P. Fishback and John A. Jones are appointed masters to sell the road, after advertising the sale six weeks.

St. Paul, Minneapolis & Manitoba.—In addition to the temporary injunction restraining the company from extending its Barnesville & Moorhead line across the Northern Pacific track, another temporary injunction has been granted to prevent the company from building a bridge over the Red River. The Northern Pacific Company claims that the bridge would be a dangerous obstruction to navigation. Argument in both these cases was to be heard this week by the United States Circuit Court in St. Paul. The object of

the Northern Pacific is evidently to obstruct as much as possible the building of any more branches in the Red River Valley.

The St. Paul Pioneer-Press, of Oct. 1, says: "The management of the St. Paul, Minneapolis & Manitoba Railway Company is crowding the work on their various extensions, and tracklaying is proceeding at the rate of one mile, to one mile and a half per day. Chief Engineer Morris yesterday prepared a map of these extensions, on which the daily progress of the tracks will be marked. The condition of the work yesterday was as follows: On the Grand Forks, Fargo, Moorhead & Barnesville extension the track is laid 31½ miles south of Grand Forks. The distance from Grand Forks to Fargo is 75 miles, and from Fargo to Barnesville is 22½ miles. The grading over the latter distance is nearly completed.

"The extension from Breckinridge to Maple River is 48 miles long, and the track is down for over half the distance. The extension from Morris to Brown's Valley is 48 miles long, and the track reached Graceville, a distance of 26½ miles from Morris, on Wednesday. The extension west of Grand Forks is graded for a distance of 15 miles, and is ironed for 11½ miles. Work is progressing very favorably on the Osseo Branch, and 12 miles of track will be laid this season. All these extensions are to be finished before severe cold weather sets in, thus adding 225 miles to the railroad system of St. Paul."

Savannah, Florida & Western.—On this company's new Florida short line the grading is progressing well. Track has been laid from the junction with the main line at Waycross, Ga., southeast six miles, and the grading is done for some distance further. Work is in progress on the bridge over the St. Mary's River as fast as the unsettled weather will permit.

Sedalia, Warsaw & Southern.—Regular trains are now running from Sedalia, Mo., south to Lincoln, 30 miles. Work is progressing toward Warsaw on the Osage River, 10 miles further.

Sioux City & Pacific.—This company's Nebraska Division is now completed to Neligh, Neb., five miles northwest from the late terminus at Oakdale, and 115 miles from Fremont.

Contracts have been let for an extension from Neligh, west by north, through the Elkhorn Valley to O'Neill City, a distance of 43 miles, the work to be completed this year.

Southern Pacific.—The following statement of earnings has been published for August and the eight months ending Aug. 31:

	August	Eight months	1889	1890
Northern Div.....	\$100,000	\$90,760	\$579,000	\$555,949
Southern Div.....	408,000	140,503	2,687,000	1,374,731
Total.....	\$508,000	\$237,263	\$3,266,000	\$1,930,680

The Northern Division is the line out of San Francisco, which is worked directly by the company. The Southern Division is the Los Angeles and Yuma line, which is worked by the Central Pacific Company.

South Florida.—Work is progressing steadily on the extension of this road from Orlando, Fla., westward toward Charlotte Harbor. Surveys are being made for a branch to Lake Apopka.

Swift River.—Work is soon to be begun on this road, which is to extend from the Conway Division of the Eastern road at Conway Corner, N. H., up Swift River, about 13 miles. Its chief object is to reach the timber lands along the river.

Toledo, Delphos & Burlington.—Tracklaying has been finished on the gap of 28 miles between Waterville, O., and Holgate, completing the continuous line of 187 miles from Toledo to Warren, Ind.

Track is also reported laid on the extension westward from Warren to Marion, 18 miles, making the road 155 miles long, from Toledo to Marion. Work is in progress on the grading from Marion to Kokomo, about 28 miles.

Union Pacific.—The following statement has been published, showing the operations of this company from the date of consolidation, Feb. 1, to June 30, five months:

Gross earnings.....	\$10,279,489
Expenses (50.19 per cent.).....	5,159,201
Net earnings.....	\$5,120,288
Interest on funded debt.....	\$2,350,348
Sinking funds.....	85,440
Government.....	625,500
Dividends paid.....	1,269,560
Surplus.....	\$789,440

An imposing monument to the late Oakes Ames is to be erected at Sherman, W. Va., by Messrs. F. L. and Oliver Ames. It is said that it will consist of a massive granite arch across the track, with appropriate inscriptions, and a colossal statue of Mr. Ames.

Vermont Valley.—This company has bought from the Northern (New Hampshire) Company the Sullivan Railroad, extending from Bellows Falls to Windsor, Vt., but on the New Hampshire side of the river. Of this purchase the Springfield Republican of Oct. 1 says: "The stockholders of the Vermont Valley Railroad Company of 1871—a very close corporation—met at the Brooks House in Brattleboro, Tuesday, and authorized, by a vote of nearly the entire capital stock, a mortgage of the road and an issue of bonds 'for the purpose of raising money.' This was the result of a vote of the stockholders at the annual meeting last June, at which the directors were authorized, for the purpose of improving the connections of the Vermont Valley Railroad in the Connecticut River line and a management common to both, to purchase the stock of the Sullivan County Railroad, which connects with the Vermont Valley at Bellows Falls and extends to Windsor, Vt., through New Hampshire. This the directors succeeded in accomplishing, some four weeks ago, at a price between \$700,000 and \$800,000, or about the same price per mile for the 26 miles as the New London road paid for the 21 miles between Brattleboro and Miller's Falls last year. The Vermont Valley Railroad has issued their bonds to pay for the purchase to the extent of \$800,000, and have secured the same by a mortgage of the property and franchises of the road between Brattleboro and Bellows Falls, Vt., 25 miles long, to the Boston Safe Deposit and Trust Company, and by a collateral pledge of the capital stock of the Sullivan County Railroad bought, the road being free from debt and represented by 5,000 shares of stock. The bonds run 30 years, and bear 5 per cent. semi-annual interest, and are considered such a desirable investment, the security being two miles of road for each mile bought, that already the company have sold over \$600,000 to investors without the aid of brokers at prices above par. The net earnings of the two roads applicable to the payment of interest are over \$100,000.

"This move on the part of the Connecticut River Railroad, who control the Vermont Valley road, will be a great surprise to many people now that it is really accomplished,

although it has been agitated for a number of years, and in 1877 came so near being an accomplished fact that time-tables were printed ready for use in case of an emergency. The road originally cost nearly a million and a half dollars, and could not be reproduced for less than that sum, and the price paid is considered to be a very fair one by good judges of railroad property. The Vermont Valley or Connecticut River people disclaim in this matter any desire to get the best of the Central Vermont, as has been alleged, but only wish to protect their property and secure a fair division of the business for the River line below South Vernon. They believe in peace, if they have to fight for it. At present the Sullivan road is operated by the Central Vermont under a contract, which expires within 90 days, and may possibly be renewed, and the Vermont Valley is operated in the interest of the Connecticut River. The 10 miles between Brattleboro and South Vernon form a link in both the Connecticut River line and the New London Northern line; but, as it is operated by the Central Vermont, all the business for New York and competing points is diverted from the River line."

The Central Vermont people say that they will build a new line on the Vermont side of the river, but that is probably only a threat, for money is not too plenty with them just now.

Wabash, St. Louis & Pacific.—On Oct. 1 this company took formal possession of the Toledo, Peoria & Warsaw road under a lease made some months ago. This road and its Western extension, the Missouri, Iowa & Nebraska, will constitute one division, to be known as the Peoria & Iowa Division. The execution of the order assuming possession has been suspended for the present. It is said that the Court made objections, the road being still in the charge of the Receiver.

This company has thus far run only a local passenger train over the Chicago Division, but on Oct. 4 it put on three trains. They leave Chicago at 8:45 a. m. and 9:15 p. m. for St. Louis, Quincy, Keokuk, etc., and at 12:15 p. m. for Kansas City and Council Bluffs. The depot will be temporarily at the corner of Stewart and Archer avenues, but the company will establish ticket offices in all the leading hotels, and check baggage and transfer passengers from those places free of charge. It is thought that there may be trouble over this arrangement, as the other lines may claim that the free transfer amounts to a cut in rates.

Webster County Mining & Railroad Co.—This company has been organized in Iowa, and has purchased a large tract of coal land in Webster County, about 12 miles from Ft. Dodge. This tract is to be connected with the Minneapolis & St. Louis by railroad. The incorporators are nearly all St. Paul men, connected with the St. Paul, Minneapolis & Manitoba Company. The company will build its 12 miles of road to Ft. Dodge and also a line south probably.

Western North Carolina.—Track is now laid to Asheville depot, or Swannanoa Junction, six miles beyond the late terminus at Guder's Ford, and 148 miles from Salisbury, N. C. The new terminus is the point where the Paint Rock and Ducktown lines separate, and is nearly two miles from the centre of the town of Asheville. It is, however, the depot for that town, as the road will not enter it. Work is in progress on the grading of both lines west of the junction.

West Jersey.—This company will shortly let contracts for the grading for a second track from Camden, N. J., to Wenonah, 12 miles. The grading will be done during the winter and the track laid next spring. This section covers most of the line used by the local and suburban trains.

The Angelsea Branch, extending from Cape May Court House to Angelsea, formerly known as Five Mile Beach, is also to be graded this winter and track laid in the spring. The company owning the beach gives the right of way and grading, the West Jersey Company furnishing ties and rails. The branch will be four miles long.

ANNUAL REPORTS.

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Central Railroad & Banking Co., of Georgia.

The lines worked by this company are as follows:

	Miles.
Central Railroad:	
Savannah, Ga., to Macon.....	192.0
Gordon to Eatonton.....	39.0
Augusta Branch, Millen to Augusta.....	53.0
Total Savannah Division.....	284.0
Atlanta Division, Macon to Atlanta.....	102.5
Total Central R. R.....	386.5
Southwestern Railroad:	
Macon, Ga., to Eufaula, Ala.....	143.0
Muscogee Branch, Fort Valley, Ga., to Columbus.....	71.0
Fort Gaines Branch, Cutbert to Fort Gaines.....	20.0
Albany Branch, Smithville to Albany.....	23.5
Blakeley Extension, Albany to Arlington.....	35.5
Perry Branch, Fort Valley to Perry.....	12.5
Upson County R. R. Barnesville to Thomaston.....	305.5
	16.5
Total worked.....	708.5

The road owned is the line from Savannah to Macon and the Atlanta Division, 294.5 miles. The Eatonton Branch, Augusta Branch (Augusta & Savannah road) and the Southwestern road are leased, the Upson County road worked under agreement. The company owns the chief interest in the Southwestern road, and its bonds are issued under a joint mortgage covering that road as well as its own.

The company also owns the Ocean Steamship Company, whose lines run between Savannah and New York; one-half interest in the Western Railroad of Alabama; controlling interests in the Mobile & Girard, the Vicksburg & Brunswick and other connecting lines. The Montgomery & Eufaula road is owned by the President of this company as purchaser at foreclosure sale, and is worked in the interest of this company.

The following statements are from an advance copy of President Wadley's report for the year ending Aug. 31, 1890, the 45th fiscal year of the corporation.

The earnings and expenses of the various lines were as follows:

	1879-80.	1878-79.	Inc. or Dec.	P. c.
Earnings:				
Savannah Div.....	\$1,081,142.55	\$1,479,250.25	I.	\$398,107.70 36.8
Atlanta Div.....	903,580.20	541,510.20	I.	362,070.00 40.1
S. W. R. R.....	844,806.13	751,575.72	I.	93,230.41 12.4
Upson Co. R. R.....	14,513.87	9,309.17	I.	5,204.70 56.0
Total.....	\$3,144,102.75	\$2,781,654.34	I.	\$362,448.41 13.0
Expenses:				
Savannah Div.....	\$52,039.50	\$30,234.63	I.	21,804.87 41.9
Atlanta Div.....	303,060.46	317,205.33	D.	14,144.87 4.5
S. W. R. R.....	409,478.48	443,952.07	I.	34,473.59 8.4
Upson Co. R. R.....	12,881.52	8,355.79	I.	4,525.73 54.2
Total exps.....	\$1,035,449.96	\$1,599,747.87	I.	\$564,297.91 54.5
Net earnings:				
Savannah Div.....	\$31,103.05	\$40,015.62	I.	\$8,912.57 28.6
Atlanta Div.....	590,519.74	224,304.87	I.	366,214.87 61.0
S. W. R. R.....	375,387.65	307,223.65	I.	68,164.00 22.0
Upson Co. R. R.....	1,632.35	953.38	I.	678.97 71.2
Total net.....	\$1,508,652.79	\$1,181,906.47	I.	\$326,746.32 27.6
Gen. R. R. Bank.....	46,387.07	42,802.28	I.	3,584.79 8.1
Bank exps.....	17,105.00	16,553.24	I.	551.76 3.3
Bank net.....	\$20,282.07	\$26,249.04	I.	\$6,966.97 34.4
Total net.....	\$1,528,934.86	\$1,208,155.51	I.	\$320,779.35 26.5

Every division shows a considerable gain in gross earnings, with a slight increase in expenses, except on the Atlanta Division, where the expenses were reduced. All have a large increase in net earnings. The average results were as follows, excluding bank earnings:

	1879-80	1878-79	Inc. or Dec.	P. c.
Gross earnings.....	\$3,144,102.75	\$2,781,654.34	I.	\$362,448.41 13.0
Net earnings.....	\$1,508,652.79	\$1,181,906.47	I.	\$326,746.32 27.6
Expenses.....	\$1,035,449.96	\$1,599,747.87	I.	\$564,297.91 54.5
Net earnings.....	\$31,103.05	\$40,015.62	I.	\$8,912.57 28.6
Atlanta Div.....	\$590,519.74	\$224,304.87	I.	\$366,214.87 61.0
S. W. R. R.....	\$375,387.65	\$307,223.65	I.	\$68,164.00 22.0
Upson Co. R. R.....	\$1,632.35	\$953.38	I.	\$678.97 71.2
All lines.....	\$4,439	\$2,129	I.	\$2,310 57.51

All the lines showed a decrease in the percentage of expenses, which was greatest on the Atlanta Division.

President Wadley thinks the increase due to the general prosperity of the country, and hopes for its continuance; nevertheless, he warns stockholders that as good a result can hardly be expected in the current year, as the road must meet an increase in cost of labor and supplies, and must spend a considerable amount for new equipment. At least six locomotives and 250 cars are needed to provide for the increased business.

The Ocean Steamship Company shows a considerable increase in earnings, in spite of the payment of \$41,188 for damages done by one of the steamers in a collision.

The company has been called upon to pay \$80,000 Savannah city bonds issued in aid of the Southwestern road and indorsed by this company. These bonds first fell due in 1889 and were then extended for 10 years. They have been paid with the exception of \$4,000 not yet presented.

During the year \$144,000 Southwestern bonds also fell due, and were paid, using for that purpose 860 shares of Southwestern stock and \$58,000 in money.

The business of the Western Railroad, of Alabama, has shown a large increase. The road has paid to this company as half owner \$134,000. There has arisen a further suit in relation to this road, the attorneys for the Montgomery & West Point income bondholders having set up a claim for fees upon the bonds taken by the joint owners in the compromise made with the bondholders. They have secured a judgment, but the amount is not yet known, though it cannot be very large.

The Selma Division (50 miles) of the Western road has been leased to the Louisville & Nashville for five years, at \$52,000 a year. The original intention of dividing the branches, giving the Columbus Branch to this company and the West Point Branch to the Georgia Company, has not yet been carried out.

The report of President Wadley says: "During the past year the board has had under consideration the advantages that would probably result from a more intimate connection with the Northwest, and, after considerable discussion, an agreement was entered into with the Louisville & Nashville Railroad Company by which we became mutually interested in an interchange of traffic. Some business has resulted from this agreement, and it is confidently expected that at no distant day the tonnage over our lines will be considerably increased; but it will require the active co-operation of the merchants of this city (Savannah) in order to develop a trade which can now be reached by our connections. * * *

"The last Legislature (of Georgia) passed a very stringent act creating a railroad commission clothed with extraordinary

ary powers. The commissioners appointed under this act are gentlemen of the highest standing and unquestioned integrity, but, as might reasonably be expected, the rates and rules first issued by them were open to criticism, not only from many railroads of the state, but from different communities whose interests were affected. This was the result of an effort to correct evils known to exist, and which the managers of railroads had in vain attempted to rectify. These rates and rules were especially onerous upon our company; but, in order to give them a fair test, they were in good faith put into operation, and in order to show the result, as compared with our rates prior to those of the Commissioners, the earnings of our roads were made up by both sets of rates. After making this test, the results were fairly placed before the Commissioners, and, after full discussion of the merits of the case, modifications of the rates and rules were conceded, which will render them less onerous.

"Admitting that some mediator between the railroads of the country and their patrons is necessary and desirable, it is certainly not reasonable to expect that so large an interest as that represented by the railroads, and which has done so much to develop the resources of the country, should have some protection beyond the rulings of any tribunal (however competent and honest in its intentions) from which there is no appeal. The present act puts in the hands of the Commissioners unlimited authority over the railroads of the state. This large property is no longer managed by its owners, and whether its earnings are greater or less virtually depends upon the rates and rulings made by the Commissioners; the officers appointed by the stockholders and directors being powerless. The mere statement of these facts will show upon what a precarious foundation the value of your property rests, and, it is believed, would even startle the Legislature which passed the act, could they review it in the light of experience. It is understood that the present Commissioners understand some, if not all, of the imperfections of the law in its present form, and it is to be hoped that they will recommend the needed modifications, so as to render its administration, under all circumstances and in any hands, just to all parties. It is believed that a law which would allow maximum rates to be made by the different roads, under the approval of the Commissioners, leaving the roads freedom of action under them, and providing for a reference to the Commissioners of all questions which may arise between the roads and their patrons, would meet and possibly solve this difficult problem much more satisfactorily than the present act."

Vermont & Canada.

The directors of this company, in a report lately issued to stockholders, give the following statement of the recent litigation in the courts:

In December, 1873, your then directors applied to the Chancellor for Franklin County, Vt., for an order on the managers to pay into court, for the use of this corporation, so much of the net earnings of the two roads for the preceding six months as was equal to the rent of your road for that time. This application was practically, though not in terms, denied. Again, just before the roads were turned over to the Central Vermont Railroad Company in 1873, your then directors applied to the same Chancellor for leave to bring suit at law in his own court to test the rights of the managers to hold your road, after they had ceased to observe the terms or conditions on which their right of possession (as alleged) was based, viz., the payment of your rent. Applications of this character are usually granted as matters of course; so, at least, we understand the rule of practice to be in such cases. Your application for this purpose was denied. Again, in November, 1873, your then directors commenced a suit at law in Suffolk County, Mass., against the old trustees as the (alleged) assignees of the lease of your road, and as such bound to perform the rental covenants, and in said suit attached by trustee process certain funds alleged to belong to the defendants in the suit. The Central Vermont Corporation thereupon applied to Chancellor Royce for an injunction against the prosecution of this trustee process, and the injunction was granted. Thus had your corporation been refused all redress inside the Franklin County Court of Chancery, and restrained by injunction from pursuing legal remedies elsewhere for the recovery of your rental; and no appeal was obtainable from the adverse rulings of this Chancellor in these matters.

Such right of appeal was, however, afterward claimed in several instances and disallowed.

Under these circumstances your old stewards (now incorporated into the Central Vermont Railroad Company) seemed to have your corporation completely in their power. It was able to hold on to your railroad without paying you any rent. The Chancellor of Franklin County has been induced to decide, and had decided, that these first-mortgage trustees and successors, in their doings either as fiduciaries or as contractors for carrying on various enterprises of great magnitude outside the line of the Vermont Central Railroad, and in intermingling and confounding together the funds derived from, or lost in, each of their numerous speculative schemes, were alike officers of his court all the while, and, as such, entitled to his protection and support, and that they could be held accountable to no one in any other forum. Had these managers been content with these successes, thus inconsistently gained by them, they might, perhaps, have held your road free of rent indefinitely, but their complete success thus far had so emboldened them that they concluded they might as well become the proprietors of the two original trust roads (the Vermont Central and Canada), and be no longer accountable or answerable thereof to any one. They therefore brought a petition, in the name of the Central Vermont Railroad Company, before Chancellor Royce, praying that these two roads might be sold free of all encumbrances, and the proceeds of sale applied, in the first instance, to satisfy that part of the trust debt owned by itself, this debt being the same in part which it had offered to assume and pay if admitted into possession by the Chancellor in June, 1873, as it was admitted. This petition was taken by appeal before the Supreme Court. The same counsel of the managers, who had told the masters that their clients had not been breaching the narrow plank of a receivership administration and accountability, now came forward and said to the Court that the trust debt due to their client (the Central Vermont Railroad Company) had been contracted by persons acting in the capacity of receivers or officers of the court, and so carried with it the credit and honor of the court itself; that debts contracted by court managers were to be treated as the expenses of a judicial administration, and constituted as such a first charge and lien upon the property being administered upon, and therefore should be satisfied by a sale of the two roads as prayed for. The hearing in the Supreme Court was had in the summer of 1877, but no decision was rendered till Oct. 30 of that year. During this interval it was given out by the managers and their counsel that the decision would certainly be in their favor; it proved, in fact, to be quite the other way, as any one who will refer to it in the 50th volume of Vermont reports may see. That decision completely negated the existence of any legitimate receivership under the so-called decree of 1864, and thus left the Central Vermont Company without lawful right to the possession of

your railroad. A fatal blow had been dealt the managers by the court of final resort. They were confounded by it, and, while in that state of mind, they said they would not submit to it, but would forthwith bring another suit for the same purpose as before, and make believe, as well as they could in the meantime, that nothing had happened to their discomfiture. They might possibly, in that way, on a second hearing in the Supreme Court, be able to get that Court either to qualify its first decision or to upset it altogether. Such was the conclusion arrived at.

A second suit was accordingly started without delay, precisely similar in character to the first, except that the second suit claimed no priority for the floating debt over the funded portions of the trust debt, as did the first suit, and except that the second suit was by bill and not by petition, and in the second suit no sign was made to indicate the fact of a previous suit. This second suit was heard (on appeal) before the same Supreme Court at its general term in 1879, and argued by the same counsel for the managers as before. We should, perhaps, qualify this statement by referring to the fact that on this occasion Judge Royce, who had been absent at the former hearing, was now present. This judge had before this time manifested his dissent from the decision of 1877, or his unwillingness to follow it, in a decision given by him as Chancellor on a petition presented by your counsel early in 1873, and passed upon by him March 1, 1878.

The report goes on to say that pains have been taken in the Vermont Central interest to circulate reports that the decision in this last case (which is expected shortly) will practically reverse the decision of the Court in 1877. They do not, however, believe this, but expect that the Court will maintain that decision. If this proves to be the case, the directors believe that proceedings can be instituted in Franklin County or elsewhere in Vermont for the recovery of the road, "without fear of further injunctions and with fair prospects of eventual success."

Northern Pacific.

For the fiscal year ending June 30, 1880, this company worked the following lines: The main line from Duluth to Bismarck, 450 miles; the Western Railroad of Minnesota, from Brainerd to Sauk Rapids, 61 miles; the section of the St. Paul, Minneapolis & Manitoba, from Sauk Rapids to St. Paul, 75 miles, of which only the use is leased; the Pacific Division, from Kalama to Tacoma, 105 miles, and from Tacoma to Wilkeson, 31 miles. This makes 722 miles in all. Some portions of the extensions mentioned below were completed during the year, but their earnings were applied on construction and are not included here.

The equipment consists of 71 locomotives; 23 passenger, 4 sleeping and 15 baggage and mail cars; 631 box, 52 stock, 135 coal, 600 flat and 33 caboose cars; 4 business and engineers' cars, and 251 service cars.

The condensed balance sheet is as follows:

Common stock	\$49,050,000.00
Preferred stock	43,412,645.12
Total stock	\$92,462,645.12
Bonded debt	3,881,834.41
Vouchers and bills payable	1,404,937.10
Profit and loss	1,281,384.74
Land sales	8,205,964.57
Total	\$107,186,795.94
Property accounts	\$97,920,120.57
Northern Pacific stock, etc.	6,127,085.86
Land Department expenses	136,089.95
Supplies	1,804,636.13
Bills and accounts receivable	707,028.85
Cash	401,824.58
Total	\$107,186,795.94

The preferred stock has been reduced by land transfers to \$43,412,645; but of \$51,000,000 authorized issue of this amount there remains in the treasury as an asset \$4,111,830, leaving the amount in circulation \$39,100,818.

Following is a statement of the bonds issued and to be issued:

Total authorized	\$7,000,000
Subscriptions paid	3,454,634
Subscriptions unpaid	545,365
Sold	573,200
Undisposed of	2,426,800
Total	\$7,000,000
Total issued	\$4,027,834
Canceled by land sales	146,000
Outstanding	\$3,881,834

The Land Department sold during the year 291,753 acres of land, the receipts being \$831,437 and the expenses \$74,981, leaving a balance of \$756,456.

The income account for the year is as follows:

Passenger train earnings	\$636,479.32
Freight	1,588,559.57
Miscellaneous	5,145.92
Total (\$3.088 per mile)	\$2,230,184.81
Working expenses	\$1,346,147.25
Taxes	43,088.68
Rentals	131,857.28
Total	\$1,521,093.21
Net earnings (\$982 per mile)	\$709,088.60
Improvements and betterments	\$392,930.27
New equipment	\$12,032.72
Interest paid and accrued	159,537.26
Total	\$674,500.25
Surplus	\$34,588.35

Total expenses were 68.21 per cent. of earnings. The report last year was for ten months only, and no comparisons are given for the year, except the statement that the gross earnings increased \$823,971.16, or 58.6 per cent.

The expenses of the general office at New York, the legal expenses, insurance and all miscellaneous expenses, are included in the operating account; also \$91,683, one-half the cost of laying steel rails between Brainerd and Fargo, over the value of the iron rails taken up, the other half being included in improvements and betterments; \$49,278 for bridges, culverts and cattle yards; \$41,216, the balance due from the company on its share of the cost of laying with steel rails the road from St. Paul to Sauk Rapids, and \$16,335 for repairs of docks at Duluth. The unprecedented snow of last winter caused an addition to the account of \$56,207. Deducting these items (\$254,690) and the operating expenses are only 48.94 per cent. of the earnings. Under the plan of reorganization, all expenses for keeping the road in high condition, and for providing additional equipment are to come out of the earnings, and during the year there was expended for betterments and improvements, \$392,930; new equipment, \$12,032; total, \$514,962.

Regarding the condition of the road the report gives the most important features as follows: "In Minnesota, the road from St. Paul to Sauk Rapids, 75 miles, jointly used and maintained by this company and the St. Paul, Minneapolis & Manitoba Railway Company, has been laid during the year with steel rails. From Sauk Rapids to Brainerd the iron is comparatively new. Steel rails also have been laid during the year on 128 miles between Brainerd and Fargo, which, with the 11 miles laid the preceding year, completes the entire distance between those

places. Steel rails are gradually being laid on the 24 miles between Thomson Junction and Duluth, owned jointly by the Northern Pacific and St. Paul & Duluth companies, 208½ tons having been laid during the last year. The work of renewing bridges, culverts, and high trestles on this joint road has been continued. At Duluth, in preparation for the new elevator system, 700 lineal feet of substantial dock have been built since the commencement of last winter; also 6,006 lineal feet of new pile trestle and track have been built, using 55,092 running feet of piles; the entire improvement costing \$22,500. In addition to this, there have been rebuilt 5,279 feet of pile track over water, at cost of \$14,327 in material and labor, which has been charged to operating expenses. At St. Paul the filling and grading of the 13 acres acquired for freight tracks, yard and buildings, are so far advanced that a freight-house, 400 by 40 feet, has been completed thereon, and the company now does its freight work on its own grounds. The expenditure incurred on this account to June 30 was \$11,025. * * * The lot given by the city of St. Paul as a site for the offices of the company has been graded, and superstructure is under way. The rooms, beyond what is required for the various departments of the company, should rent for enough to pay the interest on the cost of the building, estimated at \$30,000.

"In Dakota, 94,672 new ties, principally oak, have been placed in the track, and 24 miles of gravel ballasting completed where most required; 25,340 feet of new siding have been put in, and 13 pile bridges rebuilt. The track, in various places, is being raised, and additional snow fence constructed, to provide against the possibility of such trouble from snow as was experienced last winter. * * * There have also been various improvements in the building of freight and passenger depots. The most important improvements of this character, however, were at Fargo, consisting of a new brick, slate-roof freight-house, 150 by 40 feet, costing \$5,412, and a new brick engine-house with 12 stalls, and a brick, slate-roof shop 85 by 40 feet, costing \$39,924—the total cost being \$45,336. This is leased to the company by a donation from the citizens of Fargo of \$2,500, and by the sale of the old round and freight houses and the land appertaining to them, for which the sum of \$28,965, in cash and on time, was realized. On account of the increasing local business on this division, and the construction and extension of the line beyond the Missouri and up the Yellowstone, it will be advisable to replace the iron rails, as it may be necessary to take them up, with steel. With so much new road to be built, and so much to do at the front, it will be economy to put the completed road in such high condition as to require little expenditure to keep it so.

"Of the Pacific Division, General Sprague, the Superintendent, after setting forth the renewals of bridges, trestles and ties, says: 'It is believed that the roadbed, track and structures, together with the rolling stock and machinery of the division, are in first-class condition and that trains could be run with safety at the rate of forty-five miles per hour if desired.'

During the year 31 miles of the Casselton Branch have been built, and an organization for this road has been made under the laws of Dakota, called 'The Casselton Branch Railroad Company,' with a capital of \$600,000. When the road is completed to Goose River, the company will issue bonds to the Northern Pacific to reimburse it for all the cost of construction. On the Missouri Division 100 miles of track and telegraph line were completed and accepted by the Government Commissioners. The track is now laid and telegraph line completed to the Little Missouri, 152 miles, and it is expected that the remaining 65 miles to the Yellowstone River will be graded before next November. On the Pend d'Oreille Division the grading is completed to Spokane Falls, 150 miles, and the track is laid 25 miles. It is believed that track will be laid to Spokane Falls before the end of the working season. To connect this division with the road of the Oregon Railway & Navigation Company at Wallula, the 13 miles from Ainsworth to Wallula, being a part of the Columbia River Division, is now under construction.

With the completion of the Casselton Branch to Goose River, 43½ miles; the Missouri Division, 217 miles; the Pend d'Oreille Division, 209 miles, and the part of Columbia River Division between Ainsworth and Wallula, 12 miles, there will be of new road, 481½ miles; adding the present road operated, 722 miles, there will be operated by the company 1,203½ miles. Of these 1,203½ miles the Northern Pacific will own absolutely 1,043½ miles.

Its relation to the other 160 miles is as follows: It owns half of the 24 miles from Thomson Junction to Duluth. The amount, \$257,900, stated in the last report of the company as then due for this half, payable in the preferred stock of the St. Paul & Duluth Company, has been paid by the sale, for that purpose, of Northern Pacific preferred stock, and the company has acquired the absolute title to an undivided half of the road, free of all incumbrance. The company owns a majority of the stock, and has a perpetual lease of the Western Railroad of Minnesota from Brainerd to Sauk Rapids, 61 miles, at a rental of 35 per cent. of the gross earnings, until April 30, 1883, and after that at a rental of 40 per cent. of the gross earnings. From St. Paul to Sauk Rapids, 75 miles, the company has a perpetual lease of use of track, at an annual rental of \$40,000. The entire debt against this large mileage of road and its equipment, and in round numbers, 17,500,000 acres of land, will not exceed \$7,500,000.

The gap to be built between the Missouri and Pend d'Oreille divisions is 820 miles. There is also to be built the Wisconsin Division from Thomson Junction to Lake Superior at the Montreal River, there to connect with the proposed line to the Straits of Mackinac; and the Columbia River Division to Portland, Oregon. As to the last, negotiations are now pending for the use of the line the Oregon Railway & Navigation Company is building down the Columbia.

The company now crosses the Missouri River at Bismarck by means of a transfer boat, but it is suggested that ere long it will be necessary to construct a bridge. The estimated cost for the entire work is \$800,000. During the last year a new contract was made with the Western Union and Northwestern telegraph companies, the special features of which are that the telegraph companies shall build the line as fast as the road is constructed, and faster if this company so require. One-third of the cost of construction is to be paid by this company, and one-third of all the gross receipts at all stations on the line is to be paid to this company, except on messages sent from or destined to certain excepted places. The business of the company on the lines is to be transacted free, and off the lines free up to an agreed amount per annum; over that sum the charges are to be at half rates. The contract is for a period of fifteen years from May 1, 1880. On Jan. 1, 1880, the company began doing the express business on its lines in Minnesota and Dakota. The net earnings for the first six months were \$15,778, against \$6,042 received from express companies during the same period last year. The company has also made contracts with four steam elevators and five horse-power elevators, and the new elevator of 1,000,000 bushels capacity, now building at Duluth, which will keep the system in its control and subject to its revision regarding the maximum rates to be charged.